

Deloitte.

Researchers' Report 2014

Country Profile: France



TABLE OF CONTENTS

1. KEY DATA	3
<i>National R&D intensity target</i>	3
<i>Key indicators measuring the country's research performance</i>	3
<i>Stock of researchers</i>	4
2. NATIONAL STRATEGIES	4
3. WOMEN IN THE RESEARCH PROFESSION	6
<i>Measures supporting women researchers in top-level positions</i>	6
<i>Measures to ensure a representative gender balance</i>	9
<i>Parental leave</i>	10
4. OPEN, TRANSPARENT AND MERIT-BASED RECRUITMENT	10
<i>Recruitment system</i>	10
<i>Open recruitment in institutions</i>	10
<i>EURAXESS Services Network</i>	11
5. EDUCATION AND TRAINING	12
<i>Measures to attract and train people to become researchers</i>	12
<i>Doctoral graduates by gender</i>	13
<i>Funding of doctoral candidates</i>	13
<i>Measures to increase the quality of doctoral training</i>	14
<i>Skills agenda for researchers</i>	14
6. WORKING CONDITIONS	15
<i>Measures to improve researchers' funding opportunities</i>	15
<i>Remuneration</i>	16
<i>Researchers' Statute</i>	16
<i>'European Charter for Researchers' & the 'Code of Conduct for the Recruitment of Researchers'</i>	17
<i>Autonomy of institutions</i>	17
<i>Career development</i>	17
<i>Shift from core to project-based funding</i>	17
<i>Social security benefits (sickness, unemployment, and old-age)</i>	18
7. COLLABORATION BETWEEN ACADEMIA AND INDUSTRY	18
8. MOBILITY AND INTERNATIONAL ATTRACTIVENESS	19
<i>Measures aimed at attracting and retaining 'leading' national, EU and third country researchers</i>	20
<i>Inward mobility (funding)</i>	21
<i>Outbound mobility</i>	22
<i>Promotion of 'dual careers'</i>	22
<i>Portability of national grants</i>	22
<i>Access to cross-border grants</i>	22

1. Key data

National R&D intensity target

“France has set a national R&D intensity target for 2020 of 3%. In 2011¹, France's R&D intensity was 2.25%, with an average annual growth rate of 1% over the period 2004-2009² slightly above the EU annual average growth rate over the whole decade. However, this trend will not allow France to reach its target by 2020 as shown above, unless the reforms and the continuous prioritisation of R&D investment in the public budget allow for changing that trend.

France's public R&D budget has been increasing since 2007 (+7.3% in nominal terms, close to EUR 17 billion in 2011) despite severe budgetary constraints during the economic crisis. According to preliminary data however, this positive trend was reversed in 2012. In addition to the annual R&D budget, EUR 22 billion is being allocated (most of it as capital endowment) over the period 2010-2020 to research actors through the programme *Investissements d'Avenir*. Also, the research tax credit (CIR) has been considerably amplified since 2008 and represented EUR 4.7 billion of foregone tax revenue in 2009³ and EUR 5 billion in 2010. Finally, about 31% (EUR 4.2 billion) of EU FEDER to France is used for R&D, innovation and entrepreneurship. France has been very successful in the 7th EU Framework Programme (the success rate of French applicants is one of the highest at 25.4%) with almost 8 000 French participants in selected FP7 projects up to mid-2012, with a total EC financial contribution of EUR 3.1 billion.

France is one of the rare countries where R&D expenditure of the business sector progressed in 2009, in spite of the economic crisis, a trend probably due in large part to the CIR. Together with a decline in GDP, this progress caused a marked increase in overall business R&D intensity from 1.33% in 2008 to 1.40% in 2009. In 2010 and 2011, business R&D intensity further progressed up to 1.43% of GDP. In terms of economic activities, business R&D expenditure in France is dominated by pharmaceuticals (14% of total business R&D expenditure), motor vehicles (14%), aircraft and spacecraft (11%) and radio, TV and communication equipment (10%)^{4,5}

Key indicators measuring the country's research performance

The figure below presents key indicators measuring France's performance on aspects of an open labour market for researchers against a reference group and the EU average⁶.

¹ In 2012, R&D expenditure was 2.26% (Eurostat, 2014).

² Due to a break in series in 2004 and 2010, the annual average growth rate of R&D intensity in France can only be calculated over 2004-2009

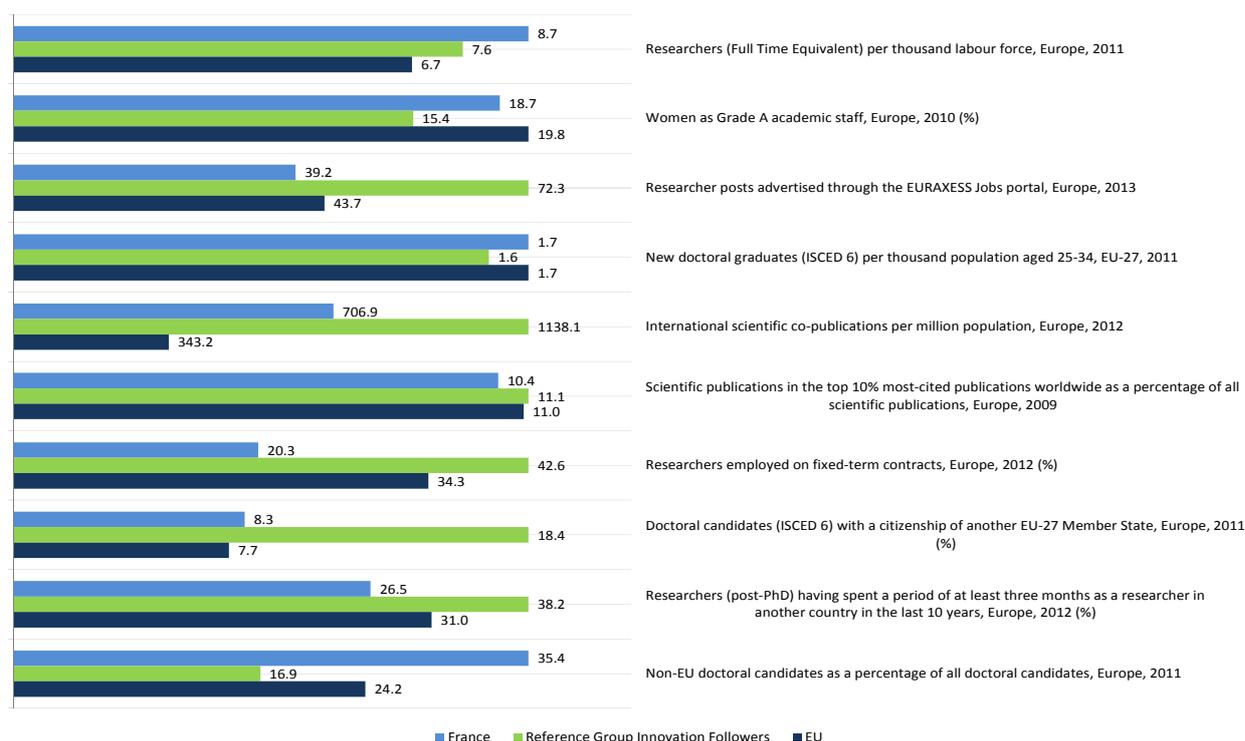
³ Not included in the government R&D budget which amounted to EUR 16.8 billion in 2011. Estimations of the foregone revenue due to the research tax credit for 2010 and 2011: EUR 5.05 and EUR 5.1 billion respectively; forecast: between EUR 5.3 and EUR 5.5 billion each year in 2012 and 2013

⁴ 2007, latest year available, data from OECD, Business R&D expenditure (BERD) by economic activity (ISIC Rev. 3) based on 'product field' information

⁵ European Commission (2013), “Research and Innovation performance in EU Member States and Associated countries. Innovation Union progress at country level 2013”

⁶ The values refer to 2013 or the latest year available

Figure 1: Key indicators – France



Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, UNESCO OECD Eurostat education survey, Innovation Union Scoreboard 2014, MORE2.

Notes: Based on their average innovation performance across 25 indicators, Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, Netherlands, Slovenia and the UK show a performance above or close to that of the EU average. These countries are the “Innovation followers”⁷.

Stock of researchers

The table below presents the stock of researchers by Head Count (HC) and Full Time Equivalent (FTE) and in relation to the active labour force.

Table 1: Human resources – Stock of researchers

Indicator	France	EU Average/Total
Head Count per 1 000 active labour force (2011)	11.86	10.55
Head Count (2011)	338 761	2 545 346
FTE per 1 000 active labour force (2011)	8.72	6.75
Full time equivalent (FTE) (2011)	249 086	1 628 127

Source: Deloitte

Data: Eurostat

2. National strategies

For the first time in France an Act has been passed which includes all matters relating to higher education and research. This Act of 22 July 2013 on higher education and research recognises the strategic role of the state in higher education with the development of the national strategy for higher education. It provides that the Ministry of Higher Education and Research will develop two national strategies in parallel: one dedicated to higher education (StraNES) and one dedicated to research (SNR). These two national strategies are to be presented to the government and parliament in a White Paper.

The definition of a national strategy for higher education is a novelty in France. A committee of experts has been appointed to draw it up. The ensuing proposals will be subject to consultation. The draft report will be submitted for public debate in the summer of 2014.

⁷ European Commission (2014), “Innovation Union Scoreboard 2014”

The national research strategy (NRS) is to be developed in line with that of the European Union. It will identify a limited number of scientific and technological priorities to meet the major challenges of the coming decades. The NRS is to be based on a consultation with the scientific and academic community and the socio-economic world. It will be finalised in the summer of 2014.

The French government already has, without waiting for the national strategies, a range of ongoing measures aimed at training enough researchers to meet its R&D targets and at promoting attractive employment conditions in public research institutions. The table below presents key programmes and initiatives intended to implement the strategic objectives to train enough researchers to reach France's R&D targets, to promote attractive working conditions, and to address gender and dual career aspects.

Table 2: National strategies

Measure	Description
Higher Education and Research Act (2013)	<p>For the first time in France the Act of 22 July 2013 brings all matters relating to higher education and research under a single legislative umbrella. This Act builds on and reinforces the directions taken by an earlier Act in 2007.</p> <p>A triple objective:</p> <ol style="list-style-type: none"> 1. raise the level of qualifications; 2. preserve the quality of research, while promoting whenever possible its transformation into jobs; 3. Combine for the first time all topics relating to higher education and research. <p>Two priorities:</p> <ol style="list-style-type: none"> 1. A university for all students: 50% of each age cohort should graduate (v. 28% today); 2. A new ambition for research aiming at employment and competitiveness. <p>To achieve this, the ministry for higher education and research received a 2.2% increase in its budget in 2013 and an target has been set of creation of 5 000 jobs over five years.</p> <p>Two principles:</p> <ol style="list-style-type: none"> 1. Openness <p>Openness to the success of all students:</p> <ul style="list-style-type: none"> - Promote a vocational orientation at baccalauréat level in higher technician training sections-STS (<i>sections de techniciens supérieurs</i>); - Encourage technology bachelors to continue their higher education in University institutes of technology (IUT); - Open university to all: recognise vocational training as one of its tasks. <p>Openness to the socio-economic environment, allowing its representatives to take their full part in the university governance;</p> <p>Introduction of a new task of technology transfer to ensure pathways from scientific discoveries to innovation;</p> <p>Openness to international students and researchers by promoting foreign language tuition to attract international students and researchers.</p> <ol style="list-style-type: none"> 2. Simplification <p>Simplification of the organisational structures of higher education and research:</p> <ul style="list-style-type: none"> - Break down the barriers between disciplines and curricula to allow pathways and reorientation; - Encourage collaboration between same-site higher education institutions/engineering schools; - Ensure coordination by higher education institutions and research organisations of all training and research schemes - Simplify the diploma and training scheme landscape (which has become more than opaque with more than 8 000 undergraduate and master's degrees). <p>Three routes to implementation</p> <p>Higher education and research institutions will become part of a:</p> <ul style="list-style-type: none"> - community of universities and institutions; - merger of universities and institutions; - association of universities and institutions.

Measure	Description
	<p>Hence, the Act promotes rationalisation of the HEIs' training offer on the basis of geographic location, and in partnership with research bodies. The new groupings will draw up a single coordinated educational policy, and research and technology transfer strategy. HEIs are required to develop student and researcher mobility by promoting periods of study or work in another country.</p> <p>The research and higher education evaluation agency (AERES) will be replaced by a <i>Haut conseil de l'évaluation de la recherche et de l'enseignement supérieur</i> (High Council of Research and Higher Education Evaluation).</p>
Investments for the Future Programme, N°2 (2013)	<p>The Investments for the Future Programme is closely related to the National Research and Innovation Strategy and puts particular emphasis on the links between science and society. The two main target groups are:</p> <ul style="list-style-type: none"> – Universities, in order to bring together internationally distinguished academics; and – SMEs in order to encourage their development. <p>The programme contributes to a new approach to the way French research and innovation system is organised by financing the most competitive research infrastructures, labs and organisations, and thus promoting attractive employment conditions in public research institutions. The programme covers sustainable development, science and technology for information and communication, health, nuclear and renewable energy, biotech, green technologies and nanotechnology.</p>
National Research Strategy (2013-2018)	<p>The key objective of the national research strategy are:</p> <ul style="list-style-type: none"> – Meet the scientific, technological, environmental and societal challenges which France will face in the coming decades by defining a limited number of scientific and technological priorities; – Reaffirm the strategic role of the State in terms of orientation and programming of research while promoting cooperation with all public and private research actors. – Strengthen the link with Horizon 2020 for the period 2014-2020 which also aims to meet the economic and societal challenges; – Promote basic research as the essential foundation for the development of high-level science; – Exploit the results of research by promoting innovation, technology transfer, expertise capacity in support of public policies, the development of scientific, technical and industrial culture. <p>The national research strategy is in line with Europe 2020.</p>
National higher education strategy (2013-)	<p>The themes and issues which committee developing the national higher education strategy has been asked to focus on are:</p> <ul style="list-style-type: none"> – Opening up higher education to the greatest number and preparation for the world of tomorrow; – Success for all; – Opening French higher education to the world; – Organisation across French territory; – Coordination of stakeholders in higher education; – Resources of higher education; – Backing research training; – Research training at all levels of higher education; – Combining research and training for university professors and lecturers; – Doctoral training.

Source: Deloitte

Data: French Ministry of higher education and research

3. Women in the research profession

Measures supporting women researchers in top-level positions

In 2010, the percentage of women grade A academic staff was 18.7% in France compared with 15.4% among the Innovation Union reference group and an EU average of 19.8%⁸.

France has put in place a series of concrete measures to support women in top-level positions in research, technology and innovation.

⁸ See Figure 1 "Key indicators – France"

In 2013, the Ministry of Higher Education and Research developed a national gender action plan. As part of this action plan the Ministry decided to introduce gender provisions in the contracts it signs with each Higher Education and Research institution every five years, including concrete objectives and assessments. In addition, the Higher Education Institutions (HEIs) are implementing the Equality Charter which applies to the general policies of the HEIs which have adopted it, notably by requiring gender-sensitive communication, sex-disaggregated data, awareness-raising and preventing violence against women.

The Act of 22 July 2013 on higher education and research makes it compulsory for HEIs to have a structural equal opportunities programme. Gender balance is a prerequisite of nominations to the governance entities and of election lists in HEI's, and a number of government bodies in the fields of education and research. Statistics relating to national higher education and research strategies must be sex-disaggregated. The ministry published a roadmap in 2014 identifying a series of actions to be taken to implement these objectives, and provided training on gender issues, fight gender stereotyping and violence against women, and improve women's career opportunities.

Gender equality promotion in the research profession is being tackled in various ways and at various levels as illustrated in the table below.

Table 3: Measures to promote gender equality

Measure	Description
Structures for equality policies	
Conférence Permanente des Chargé-e-s de Mission Egalité et Diversité de l'Enseignement Supérieur (CPRD) (2011-ongoing)	Based on recommendations from the Rectors' Conference on gender equality, the University of Strasbourg was at the origin of the creation of a permanent conference of equality and diversity officers in higher education and research. Fifty-one universities have so far joined this network whose primary goal is the exchange of best practices, notably in human resource management.
Mission parité et lutte contre les discriminations (2001-2014)	The Ministry of Higher Education and Research in 2001 created an Office dedicated to equality in science and technology. Until 2014, the Office was responsible for setting up strategies for equal opportunities and the fight against discrimination in HEI and in the dialogue between them and the Ministry. One of its working groups ("Europe" Group) focused on sharing best practices from Member States and Associated Countries among universities and research institutions.
Mission pour la place des femmes au CNRS (2001-ongoing)	The National Centre for Scientific Research (<i>Centre National de la Recherche Scientifique - CNRS</i>) is the largest French research centre. It established an Office focusing on the place of women in science in 2001. CNRS was the first public research institution in France to set up an operational structure to foster gender equality within the organisation and promote full participation of women in scientific research. The "Mission" reports directly to the President of the CNRS. The CNRS in 2013 organised a series of awareness and capacity-building workshops on gender equality with one-day training schemes, including presentations on the status of women at CNRS, indirect discrimination in research careers, gender stereotypes, etc. The target public for these were Human Resource and Communication Officers as well as research institutes' administrative directors, regional delegates and central department managers. The CNRS organises regular conferences on gender and science.
Pôle Egalité Hommes Femmes, Université Paris Diderot (2010 - ongoing)	The Paris Diderot University (<i>Université Paris Diderot, Paris 7</i>) in 2010 created an Equality Centre to promote and favour gender equality. The Centre carries out surveys, organises training courses and awareness-raising actions (informing students and academics) but it also applies the Equality Charter between Men and Women thus devising policies and actions promoting women in its institution. They are currently involved in the TRIGGER EU-funded project on structural change.
National Reports	
La parité dans les métiers du CNRS - Bilan social (annually)	The CNRS each year publishes an inventory of the situation in relation to equality between men and women in R&D. The report deals with gender equality in recruitment, training, promotion, qualification, classification, working conditions and salary, as well as the representation of women on boards. The report allows the CNRS to provide explanations for inequalities (demographic, historical, sociological factors, etc.) as well as to spot the factors creating these inequalities (procedures, evaluation criteria, regulatory and common practice, etc.).
Statistiques sexuées et temporelles du personnel	The Paris Diderot University in 2011 published a report on gender statistics in permanent positions over the period 2000-09. The report enables comparison of

Measure	Description
titulaire de l'Université Paris Diderot (2000-2009) (2011)	career progress between men and women by identifying and explaining the reasons for these inequalities.
Specific measures by organisation	
Agreement on Professional Equality between Men and Women (Accords sur l'Égalité Professionnelle entre les Hommes et les Femmes à l'IFREMER) (2008 and 2011)	<p>IFREMER (<i>Institut français de recherche pour l'exploitation de la mer</i>) [marine research institute] in 2008 signed an 'Agreement on Professional Equality between Men and Women' to promote attractive employment conditions. That first agreement ran until 2011 and has been renewed until 2014. Its goals are to:</p> <ul style="list-style-type: none"> – Ensure gender balance in recruitment, promotion, and other committees; – Encourage trade unions to achieve gender balance; – Ensure that no gender factor will be taken into account in career development; – Establish a monitoring committee to oversee implementation of the agreement.
Centre National de la Recherche Scientifique – CNRS	<p>The CNRS is a major partner in the INTEGER (Institutional Transformation for Effecting Gender Equality in Research) project. This began in March 2011 and will last until February 2015. It is funded through the European Commission's Science in Society FP7 Programme (call FP7-SCIENCE-IN-SOCIETY-2010). The objectives of INTEGER are to:</p> <ul style="list-style-type: none"> – Create sustainable structural change to improve the career paths of women researchers in STEM through the implementation of gender action plans; – Use and assess a variety of tools and techniques to support an effective and comprehensive organisational gender management strategy and share experience, tools and learning, through guidelines, case studies, role models, publications, public speeches and other means of dissemination. <p>The five-year action plan covers four key themes:</p> <ol style="list-style-type: none"> 1. Empowerment of decision makers; 2. Organisational structures; 3. Career progression, development and support; and 4. Work-life balance.
Good practice examples	
Diderot University's 'Gender Action Plan' (2011)	<p>The Paris Diderot University's Gender Action Plan:</p> <ul style="list-style-type: none"> – Encourages all committees, working groups, and councils to reach the European target for representation of women of 40%; – Set up a 'watch unit' on issues related to violence (physical or verbal abuse, sexual harassment, discrimination); – Requires that all documents be written in gender-neutral language; and – Mainstreams gender issues and actions.
Infinités Plurielles: 140 scientifiques vous parlent de science (ongoing)	This exhibition of photos of 140 women scientists from a range of disciplines and universities has been touring France and other countries (including other countries, such as Argentina and China) since late 2013. It is an initiative of the Ministry of Higher Education and Research.
Network of universities' staff (ongoing)	The Paris Diderot University promotes a network of university staff to encourage and help all university personnel, men and women, academics or administrative staff, to draft applications for promotion, carry out research, apply for fellowships, grants and bonuses. Its goal is to prevent self-censorship among university personnel.
Paris Diderot University (ongoing)	The Paris Diderot University encourages personnel rotation in administrative tasks that tend to be carried out by women. The maximum recommended period in these functions is five years. In 2011, the University modified its statute so that elected posts are gender-balanced and gender balance is secured.

Source: Deloitte

As France's research landscape is rather diversified⁹, strategies can either be coordinated nationally or devised internally within each research institution.

⁹ The scientific landscape in France is composed of Public Scientific and Technological Institutions (EPST), and Public Administrative Institutions and Universities, but also industrial and commercial institutions governed by private law but carrying out public service missions. IFREMER is one of those. The CNRS on the other hand is an EPST

Table 4: Measures to promote networking activities among research institutions in France on gender equality

Measure	Description
Networking	
Agreements on Professional Equality between Men and Women (<i>Accords sur l'Égalité Professionnelle entre les Hommes et les Femmes à l'IFREMER</i>) (2008-2014)	<p>The three-year agreements signed between IFREMER and the labour unions recognise the importance of professional equality, in particular in terms of access to employment, professional training and career development (mobility, promotion and salary) as well as work-life balance. IFREMER has agreed that the percentage of women promoted every year should be at least equivalent to the percentage they represent in their category. Recruitment salaries are based on qualifications (diplomas) and experience. These guarantee identical pay between men and women. IFREMER has also established specific measures so that when working in the field (at sea and on ships), women can lead missions as easily as men. IFREMER integrates work-life balance in its agreements with labour unions, thus ensuring fair career development, through various initiatives, such as:</p> <ul style="list-style-type: none"> – Flexible working hours; – Video conferences or conference calls in preference to travel; – Meetings between 9:00 am and 5:00 pm, and not on Wednesdays (when children do not go to school in France) or school holidays; and – Part-time work (equal salary, equal promotions and bonuses, equal level of responsibility).
Dual Career Network (ongoing)	<p>The French universities of Strasbourg and Haute-Alsace are part of the 'Dual Career Network' with the universities of Freiburg (Germany) and Basel (Switzerland), and the <i>Karlsruher Institut für Technologie</i> (Germany). The network welcomes couples, helps them search for jobs in nearby universities or within the same geographic area, and assists them with accommodation and childcare. 'Dual Career Couples' are those in which each spouse has a university degree or equivalent. The network meets twice a year and works on the recruitment procedures of each country, possible salaries and potential positions, putting in contact candidates and university departments or laboratories.</p>
Internal communication schemes (ongoing)	<p>IFREMER uses its internal communication schemes to target women and inform them about the possibilities offered to them to pursue higher level positions.</p>

Source: Deloitte

Measures to ensure a representative gender balance

The French government in 2011 adopted a text ensuring that electoral rolls for university and research institution boards are drawn up with the objective of having gender-balanced representation.

Furthermore, quotas were introduced in the following articles of a Law of March 12, 2012¹⁰, relating to various aspects of the civil service, including the fight against discrimination.

- Article 52: the Boards of Directors and Supervisory Boards of state-owned enterprises are required to include 20% of each gender the first time they are renewed after passage of the law, and 40% by the second renewal.

- Article 55: From January 1st, 2015, the administrative authorities in charge of recruitment or promotion of personnel must ensure that juries and selection committees include a minimum of 40% of each gender. However, there are mechanisms for exceptions to the rule if there are specific recruitment problems or needs specific to a particular type of employment (*statut particulier*).

- Article 56: Since January 1st 2013, at least 40% of new senior appointments each year in central and most types of local government, as well as hospitals, have had to be of men and 40% of women. The exceptions are if someone is being rolled over in the same position of being appointed to a similar type of position. Financial sanctions are provided for if the law is not respected.

If the 40% threshold has not been reached for the under-represented gender by 2018, financial sanctions will apply to the administrative entity which has failed to comply.

¹⁰ Available at: <http://www.fonction-publique.gouv.fr/fonction-publique/modernisation-fonction-publique-59>

While the law does not apply to the administrations of universities or higher education and research institutions, the ministry Gender Action Plan (GAP) extends the financial penalties to Higher Education and Research governance as well and as a result, the target has been included in the 2013 Act on research.

Parental leave

A 2012 decree on maternity leave in higher education and research¹¹ clarified and stabilised the situation of women and men in relation to maternity, paternity and adoption leave by guaranteeing that:

- Women can take the equivalent of one semester in maternity leave, irrespective of whether the period of level falls in term-time or during the vacation;
- Irrespective of when they give birth, their right to annual holidays will be maintained and not replaced by maternity leave;
- Adoption leave is provided; and
- Men and women can ask for a “Leave for Research and Thematic Conversion” (CRCT)¹² after maternity or parental leaves. CRCT beneficiaries are meant to work on a research project for 6 or 12 months without any teaching involvement. Therefore, it is possible to come back from maternity or parental leave and have some time to focus specifically on research before starting again with both teaching and research.

Finally, the text allows universities and institutions to go still further and adopt even more gender-sensitive measures. As a result, universities, such as Paris Diderot, can systematically allow CRCT beneficiaries to continue with their research at the end of their maternity leave or decide not to limit leave to maternity but also to provide paternity or adoption leave for both parents.

Finally, compared to the three years prior to adoption of the new law when the parental leave (for both men and women) was counted as equal to 1.5 years for promotion, the law¹³ now (since 2001) ensures that parental leave equals 2 years in a civil servant’s career.

French law guarantees maternity leave and applies to research institutions. Women are normally paid by their employers during this leave and their contract can be extended. If the project would otherwise end during the maternity leave, it is in general extended, as is the funding.

The replacement of women on leave depends on each institution. In IFREMER, for example, the replacement in the team of the person on maternity leave is systematic and women on maternity leave have the same career development as those working (general bonuses, etc.) As part of its gender equality agreement, IFREMER implements specific salary measures to combat inequalities between women and men caused by interruptions to employment (maternity or adoption leaves, or part-time work).

4. Open, transparent and merit-based recruitment

Recruitment system

French universities and public research organisations have a publicly transparent and open recruitment policy based on merit and enshrined in a variety of statutes. Universities may hire lecturers and professors of any nationality and qualification for any duration, and institutions may exempt lecturers or professors from abroad from certain accreditation requirements based on French qualifications. Competitions for vacancies at universities must normally be in French, but some exceptions are allowed. Public research organisations may hire on fixed-term or permanent contract, and there is no nationality requirement for researcher recruitment for civil servant or permanent contracts.

Open recruitment in institutions

The table below presents information on open recruitment in higher education and public research institutions.

¹¹ *Congés légaux* NOR : ESRH1220221C circulaire n° 2012-0009 du 30-4-2012ESR - DGRH A1-2

¹² For more information see http://www.enseignementsup-recherche.gouv.fr/pid20536/bulletin-officiel.html?cid_bo=23779

¹³ *Loi n° 2001-397 du 9 mai 2001 relative à l'égalité professionnelle entre les femmes et les hommes.*

Table 5: Open recruitment in higher education and public research institutions

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	Yes	Institutions have a statutory requirement to post all university public job vacancies for researchers with a teaching position (i.e. professors and lecturers) on the GALAXIE national platform. Calls for open competition for positions in public research organisations are published on the Légifrance regulatory website.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	Yes	Any teaching or research position at a university, of whatever level and whether permanent or fixed-term is published on EURAXESS through the Ministry of Higher Education and Research. Some 5 000 jobs are published annually. Some public research organisations also post their job vacancies on EURAXESS jobs as well as on their own websites.
– publish job vacancies in English	Yes	– GALAXIE publishes job vacancies in French; institutions may provide information in English if they wish; – Public research organisations frequently publish their job vacancies in French and English (e.g. INRA, CNRS, CEA).
– systematically establish selection panels	Yes	Law No. 2007-1199 of 10 August 2007 requires the use of selection panels for contractual lecturers, professors and other research staff at universities.
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	At least half university selection panels must be made up of members external to the institution. This may include academics and researchers from foreign institutions, and guidance issued in 2012 specifically encourages this. The statutes of public research organisations frequently require inclusion of external panel members, though percentages vary. These panels sometimes include foreign members.
– publish the composition of a selection panel (obliging the recruiting institution)	Yes	Universities are statutorily required to publish the composition of the selection panels. Composition of research organisation panels is published either in the national official bulletin or in the research organisation's bulletin.
– publish the selection criteria together with the job advert	No	Institutions do not publish selection criteria together with the job advert.
– regulate a minimum time period between vacancy publication and the deadline for applying	Yes	Institutions regulate a minimum time period between vacancy publication and the deadline for applying.
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	Yes	Institutions carry the burden of proof to prove that the recruitment procedure was open and transparent.
– offer applicants the right to receive adequate feedback	No	Institutions do not offer applicants the right to receive adequate feedback.
– offer applicants the right to appeal	Yes	Applicants may appeal against the decision of the institution to reject their candidature.

Source: Deloitte

EURAXESS Services Network

In 2013, the number of researchers posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 39.2 in France compared with 72.3 among the Innovation Union reference group and an EU average of 43.7¹⁴.

General and specific information is available on the EURAXESS France portal. Specific information is also available through the Ministry of Immigration portal. This provides information on the scientific card for non

¹⁴ See Figure 1 “Key indicators – France”

EU residents. The CLEISS (*centre des liaisons européennes et internationales de sécurité sociale*) portal also provides information on social security rights.

5. Education and training

Measures to attract and train people to become researchers

The completion of a PhD is a period of training and employability. The Ministry of Higher Education and Research offers young researchers three types of employment contract specifically tailored to their future professional profiles during this period: the doctoral contract, the employment contract concluded under private law in the context of a CIFRE contract and recruitment with a temporary status (ATER). Full information on this is in Table 9.

The table below summarises key measures to attract and train people to become researchers.

Table 6: Human Resources - Key programmes and initiatives

Measure	Description
<i>Multi-level</i>	
Public Research Organisations (ongoing)	Most public research organisations implement policy measures to attract young people to research and help teachers to involve young people in research. Likewise the CCSTI public research organisations attract youngsters by means of events, visits to scientific sites, lectures in schools, workshops, conferences, competitions, symposiums in partnerships with several research organisations, etc. These actions are presented and led by scientists who have been trained for that purpose. See also Act on higher education and research of 22 July 2013.

Source: Deloitte

The Investments for the Future programme offers many opportunities for PhD to gain experience in laboratories of excellence or via excellence initiatives in all scientific disciplines, including STEM subjects.

The French government has so far only used awareness and communication tools to increase the number of women students taking science to an advanced level.

Table 7: Women students taking science to an advanced level

Measure	Description
Exhibitions on women (annually)	One of the activities of the CNRS is to organise exhibitions and the annual 'Young female mathematician workshop' in association with 'Women and Mathematics'. Based on a scientific agenda, the workshop provides mentoring and awareness-raising activities on gender-related issues. There are also round tables on career and gender equality as well as presentations by sociologists. The goal of such workshops is to create networks, fight self-censorship and detect potential obstacles in career development. Young male researchers are also welcome to participate.
Irene Joliot-Curie Prize (annually)	The Ministry and the EADS Foundation organise the Irene Joliot-Curie Prize every year. From the 10 th edition in 2011 up till today, the Prize has been co-organised with the Academies of Science and Technologies. The Prize is meant both to propose role models for young researchers and offer highly scientific female profiles to the male-dominated scientific community. Three prizes are generally awarded for: <ol style="list-style-type: none"> 1. Young researchers; 2. The woman scientist of the year; 3. Women scientists in private research.
National Initiatives (ongoing)	National initiatives have been under way for over a decade to address young female students' career choice. They primarily focus on high school students. The Ministry of Higher Education and Research supports numerous associations in their action at local level as well as a website to encourage girls to choose science (http://www.elles-en-sciences.net/). The Ministry is also setting up an action inspired by the German 'Girls' Day' that would institutionalise one day in the year during which girls would go and discover high technology and scientific jobs in research institutions and universities. There are also initiatives by sectoral groups, such as the women engineers' association (Association Femmes Ingénieurs).

Source: Deloitte

Doctoral graduates by gender

The table below shows the number of doctoral graduates in France by gender as a ratio of the total population.

Table 8: Doctoral graduates by gender

Indicator	France	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2011)	1.7	1.7
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2011)	1.4	1.6
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2011)	1.9	1.8

Source: Deloitte

Data: Eurostat

Funding of doctoral candidates

The table below presents three different funding paths accessible for doctoral candidates.

Table 9: Funding opportunities for doctoral candidates

Funding scheme	Description
Employment contract	<p>Doctoral contract - The implementation of the new doctoral contract (2009) has significantly improved the working conditions of young researchers as well as the national R&D targets. It mainly aims to:</p> <ul style="list-style-type: none"> – Establish a single contractual framework, providing more protection and applicable to all public employers; – Integrate for each doctoral trainee in a single contract all activities directly related to the preparation of his/her PhD, but also relevant activities, such as training; – Establish a single remuneration platform; and – Ensure full social security coverage. <p>This is a three-year term work contract for doctoral trainees in universities and public research institutions. It may be extended for a year for professional or personal reasons, such as maternity leave or sick leave. The doctoral contract guarantees all the statutory social aspects of a ‘traditional’ employment contract. In September 2010, 5 320 students registered for their first year of doctoral training signed a doctoral contract.</p> <p>The activities assigned to the doctoral trainee may relate exclusively to research or include other tasks as well: teaching, scientific and technical information, promotion of research, consultancy assignments or expertise to companies or public authorities.</p> <p>CIFRE (Convention Industrielle de Formation par la Recherche) The CIFRE is a partnership between French industry or other employment sectors, a research laboratory and a doctoral candidate. During a three-year contract with the company or other private employer, the doctoral trainee benefits from a high level of scientific supervision that will help in writing and defending a PhD dissertation while contributing to research activities. The system is managed by the ANRT (<i>Association Nationale de la Recherche Technique</i>). CIFRE fellowships are funded by the French Ministry Higher Education and Research. It funds around 1 300 new fellowships per year, which means there are some 4 500 ongoing fellowships.</p> <p>Doctoral Contracts for Disabled Students In view of the number of disabled students dropping out of higher education before the doctoral level), the Ministry of Higher Education and Research in 2011 launched a three-year campaign of special funding of doctoral contracts for disabled students. The contracts are identical to those for young researchers who are not disabled, but the funding is attributed as an “extra contract” to the universities at which these young researchers are enrolled. Based on the potential pool of disabled students, the Ministry had planned to fund a total of 32 contracts (during the period 2011-2013) but the success of the first two years (nine contracts in 2011, 25 in 2014) led it to increase the total number of funded contracts. Candidates, university presidents and research directors may apply, and a selection is made by a jury on the basis of the excellence of the candidates and the disability policies of the institutions.</p> <p>ATER contrats (Attaché temporaire d’enseignement et de recherche): this fixed-term contract for teaching and research is a recruitment scheme for young researchers (doctoral</p>

Funding scheme	Description
	trainees or PhD holders. They receive a monthly gross salary plus an annual bonus for research and higher education. In 2011, there were 5 948 ATER contracts.

Source: Deloitte

In the 2012-2013 academic year, 65.2% of young researchers enrolled in the first year of doctoral training had specific funding for this. Of these 31% were funded through a doctoral contract (three-year employment contract) and 10% through a CIFRE convention (see table 9); a further 38% were funded through “other” doctoral contracts (e.g. from other ministries, research organisations or a local authority). Doctoral contracts are all employment contracts carrying the rights of employees. A minority were funded by fellowships rather than being on contract. The fellowships are generally funded by foreign organisations or countries.

The **CIFRE** scheme (Industrial Agreement of Training through Research) has been proven to increase the employability of researchers in the private sector: more than six out of ten doctors according to a study in 2009 were recruited in the CIFRE partner company (42%) or laboratory (16%), while others were recruited elsewhere. The vast majority of doctors funded by means of a CIFRE find employment within 6 months (90%) and a further 6% within 12 months.

Measures to increase the quality of doctoral training

The table below summarises the main measures introduced by France in support of doctoral training.

Table 10: Measures to increase the quality of doctoral training

Measure	Description
Doctoral Schools (ongoing)	As of September 2011, the Ministry of Higher Education and Research had accredited 286 doctoral schools (<i>Ecoles Doctorales</i>) with 65 000 doctoral trainees. The doctoral schools are established under an agreement between the State and universities (<i>contrats d'établissements</i>). The doctoral schools provide training and development for participants. They offer future PhD holders high-level scientific supervision as well as preparation for entering the labour market.
Higher Education and Research Law – new groupings (2013)	The new law creates communities of universities and institutions (“Comue” – <i>Communauté d'universités et d'établissements</i>) on one geographic site. This is expected to lead to greater coherence in doctoral training. Three types of combination are available: merger, community or association of universities. The existing PRES (<i>Pôle de recherche et d'enseignement supérieur</i>) were given one year by the law to convert to Comue status (see chapter 2 “National Strategies”).
International cooperation (ongoing)	<p>Doctoral schools contribute to the visibility and attractiveness at European and international levels. The decree of 6 January 2005 relating to the international joint degrees under joint supervision (“cotutelle”) gives institutions the ability to organise this as part of an agreement between the institutions involved.</p> <p>International partnerships can also be structured in European or international doctoral colleges:</p> <ul style="list-style-type: none"> – At the University of Strasbourg, the European Doctoral College gives thirty doctoral trainees the opportunity to prepare a jointly supervised doctoral research project involving the University of Strasbourg and a university or research organisation in a country chosen by the doctoral candidate; – The ‘Université européenne de Bretagne’, which has an international doctoral college whose mission is to share and coordinate international doctoral training, has signed several agreements with higher education institutions in Brazil. The jointly supervised doctoral research projects deal with cell and molecular genetics, marine environmental science and cross-language research on memory, identity and territory.

Source: Deloitte

Skills agenda for researchers

France is working to develop the skills of researchers so that their training is adapted to the needs of academic and industrial markets. It considers that devices such as the French doctoral contract or industrial research training agreement (CIFRE) can be models for Europe.

In concrete terms, France is:

- facilitating the financing of PhDs: the factors favouring employability of young PhD holders are upstream during doctoral training. This is why doctoral contracts are regarded as important; Moreover, the CIFRE agreements have been proven to improve employability (see Chapter 5 “Education and Training”);
- professionalising doctoral training: in order to promote employability, higher education institutions (universities) are encouraged to match their training programmes to the needs of the private sector. In addition, many actions and modules are in place to support doctoral trainees in moving into professional life. These include doctoriales (“matchmaking” events at universities attended by businesses) and help desks for employability (*Bureau d’Aide à l’Insertion Professionnelle: BAIP*);
- encouraging student entrepreneurship: the Ministry of Higher Education and Research, and the Ministry of Labour, Employment, Vocational Training and Social Dialogue in 2009 launched annual calls for “Creating clusters of student entrepreneurship” to promote university graduates’ entrepreneurship;
- increasing links with industry: stronger links have been forged between academia, research and industry sectors. The research Tax Credit (CIR) is one among the measures taken to promote the recruitment of young doctors by private companies;
- communicating PhD skills to the private sector: the transferable skills approach is regarded as the most appropriate for bringing PhD holders and the private sector closer together;
- obtaining recognition the PhD in the public and private sectors: the aim is to obtain recognition of PhDs in the public sector (central and local government, and hospitals) and private sectors, and to facilitate access to senior civil service bodies in accordance with the Act of 22 July 2013 on higher education and research; and
- recognising the PhD in salary and skills: the law requires that this be recognised in all collective agreements by January 2016.

6. Working conditions

Measures to improve researchers’ funding opportunities

The table below summarises specific action taken by the French government to promote the attractiveness of French research.

In addition, the Ministry of Education and Scientific Research has a policy of encouraging Higher Education Institutions (HEIs) to reduce the extent to which doctoral researchers are paid a stipend rather than receiving a salary, since those on a stipend are deprived of social security rights; doctoral contract (*le contrat doctoral*) which is a fixed term contract adapted to PhD is the most valued type of financing. It also asked the National Research Agency to extend financing for doctoral students/trainees to the human and social, and life sciences from 2013.

Table 11: Measures to improve funding opportunities for researchers

Measure	Description
Investments for the Future	See chapter 2 “National strategies”.
CIFRE Agreements	See chapter 5 “Education and Training”
Joint Chairs (<i>Chaires mixtes</i>) (ongoing)	This measure allows a university and a research organisation jointly to recruit a lecturer whose profile covers an agreed scientific topic. The lecturer is placed in the research organisation and exempted from two-thirds of the normal teaching activity. Researchers with a teaching position receive a scientific excellence bonus of between EUR 6 000 and EUR 15 000 per year, and an enhanced scientific environment by the allocation of funds of between EUR 10 000 and EUR 20 000, depending on the project.
University Institute of France (IUF) (ongoing)	The University Institute of France was established to support the development of high-level research in universities. The objective is to improve the conditions for research for researchers with a teaching position in their university, without abandoning their mission of educating/giving lecturers. The existence of two classes of member – ‘Juniors’ (under the age of 40 when they are appointed) and ‘Seniors’ reflects the desire to support both emerging and pre-existing excellence. In 2013, some 520 of the 1 350 members of the IUF were ‘Juniors’.
Programmes funded by the National Research Agency (ANR)	
2011-2013 Programme planning cycle	The ANR 2013 programme planning completed the three-year cycle spanning 2011-2013 in a context of budget restrictions. The programme planning guidelines for 2013 were adopted by ANR’s Governing board on November 14, 2012. The programme

Measure	Description
	<p>planning framework was restructured to integrate the general directions established by the Ministry of Higher Education and Research. The 2013 edition thus hinged around three components:</p> <ul style="list-style-type: none"> – Non-thematic instruments (Blanc programme, Young Researchers, Post-doctoral Return, Industrial chairs, etc.); – Construction of the European Research Area and multilateral collaboration (ERA-NETs and multilateral programmes); – Thematic programme planning (28 programmes).
ANR and investments for the future (<i>Investissements d'avenir</i>)	<p>Since 2010, the ANR has been the main agency responsible in the field of higher education and research for the Investments for the Future programme. In this context, it provides funding for and monitors projects on centres of excellence and health-biotechnology transfer and recovery. ..</p>

Source: Deloitte

The setting up of the ANR in 2005 introduced project-based (short-term) research funding. This gave young researchers the opportunity to submit proposals in their own name rather than through a research organisation, thus leading to higher levels of responsibility for individual researchers in submission and management of a project.

Remuneration

Since the introduction “Career Plan” (*Plan carrières*) 2009-2011, universities have had regulatory levers and means to enable them to run a more individualised human resources strategy that provides better recognition for the more professional investment of researchers. This has led to:

- New reclassification measures: this has resulted in a significant improvement for lecturers in the way the years of doctoral training, public or private activities, and international mobility are taken into account in their conditions;
- An increase in early career remuneration has increased since September 2009 of 12-25 % depending on the duration of their activities prior to recruitment;
- Accelerated career paths for professors by reducing the time required to reach certain levels.

The career acceleration has been enhanced by a significant increase in opportunities for promotion of senior lecturers and professors recognised as ‘first class’ and ‘exceptional’. Thus, the promotion rate to senior lecturer rose from 12% in 2009 to 20% in 2011, while the promotion rate to exceptional class professor rose from 10 % in 2009 to 15% in 2011.

There has also been a significant increase in the number of promotions in public research organisations: when comparing the periods 2006-2008 and 2009-2011, the average increase in the promotion rate of experienced researchers was between 40% and 80%.

For further information, see the country profile on remuneration of researchers from the MORE2 study on the EURAXESS website.¹⁵

Researchers’ Statute

Most researchers in public institutions with a teaching position - lecturers and professors (*maîtres de conférence et professeurs des Universités*, who are known as *enseignants-chercheurs*) are governed by the general civil servant statute and decree 84-431 (of June 6, 1984) and decree 83-1260 (of December 30, 1983) respectively.

On the other hand, each public research organisation is governed by specific rules on researchers’ salaries, career prospects, employment contracts, social security coverage, freedom of research and participation in decision-making processes.

¹⁵ <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

'European Charter for Researchers' & the 'Code of Conduct for the Recruitment of Researchers'

Since 2008, 38 public higher education and research institutions have committed to implement the principles of the 'Charter & Code'. The 'Charter & Code' principles have been promoted since then through the EURAXESS France network, the Marie-Curie actions – and more specifically the COFUND, which is supported by the Ministry of Higher Education and Research and implemented by public institutions.

The implementation of the Human Resources Strategy for Researchers (HRS4R) is being promoted by means of information through a dedicated HR network, the 'GTN RH' network and seminars for HEIs' human resources directors.

Autonomy of institutions

In France, research institutions and universities are autonomous in defining their recruitment strategy (recruitment of researchers for permanent positions or recruitment of the staff for permanent or temporary positions). The University Freedoms and Responsibilities Act (2007) allows universities to provide bonuses and other financial incentives to researchers and researchers with a teaching position. The initiatives under the Investments for the Future Programme provide more flexibility in researcher recruitment (especially because part of the recruitment will be carried out through private foundations) and more attractive salaries and benefits.

Career development

The Career Plan is one of the strategies implemented by the Ministry of Higher Education and Research aimed at improving researchers' career opportunities. It focuses on:

- Attracting the best young people to teach/carry out research at universities;
- Enhancement of professional commitment and excellence; and
- Mobility programmes and adequacy of university management.

Benefits from the Career Plan for researchers with a teaching position include:

- Better remuneration;
- An evaluation of all educational activities, including practical work;
- More or fewer hours of instruction depending on each year's priorities;
- Increased opportunities for career progression and facilitation of the transfer from one grade to another;
- Bonuses for doctoral supervision and research known as the PEDR (*prime d'encadrement doctoral et de recherche*) introduced in 2014 to replace a system of bonuses for scientific excellence.

Shift from core to project-based funding

Project-based research funding develops independence and responsibility in project management, set-up of the project and its integration in the laboratory; hence the project holder demonstrates that the project is an integral part of laboratory activities.

According to the ANR 2012 annual report¹⁶, project-based funding is suitable both for fundamental research and applied research, whether conducted in the public sector or in public-private partnerships. The ANR acts as an accelerator and amplifier of research topics that emerge within different scientific communities, be they universities, research organisations, alliances (groups of research organisations) or, in some cases, firms and clusters.

In 2013, in order to follow the general guidelines set by the Minister of Higher Education and Research, a new ANR programme orientation was implemented:

- Non-thematic instruments (Blanc programme, Young Researchers, Post-doctoral Return, Industrial chairs, etc.);
- Construction of the European Research Area and multilateral collaboration (ERA-NETs and multilateral programmes);
- Thematic programme planning (28 programmes).

¹⁶ Available at: http://www.agence-nationale-recherche.fr/fileadmin/user_upload/documents/2011/ANR-Rapport-annuel-2010.pdf

Social security benefits (sickness, unemployment, and old-age)

All researchers with employment contracts receive full social security coverage (including sickness, unemployment and pension benefits). All ANR fellows are recruited under doctoral contracts. Both doctoral and post-doctoral candidates benefit from sickness and unemployment rights.

7. Collaboration between academia and industry

The 1999 law on innovation and research established three provisions which allow research civil servants (*agents du service public de la recherche*) to work with private companies. They may:

- participate in the start-up of a company intended to develop research activities they are dealing with as part of their civil service job (*création d'entreprise* i.e. entrepreneurship);
- provide long-term scientific consultancy to a company that values their own research (*concours scientifique*); they may hold up to 49% of this company's share capital;
- be a member of the board or supervisory board of a company promoting dissemination of public research results; they may hold up to 20% of this company's share capital.

Moreover, researchers (*chercheurs*) and researchers with a teaching position (*enseignants-chercheurs*) have the right to take part-time jobs with a private company which is carrying out tasks for a university or EPST (*Établissement Public à Caractère Scientifique et Technologique*). Similarly, an academic researcher may be made available full or part-time (*mis à disposition à temps incomplet ou complet*) to a company or private organisation, French or foreign, on specific remuneration terms. The transfer of a civil service researcher to the private research sector is allowed for five years renewable. Researchers and researchers with a teaching position receive one-year additional seniority (*bonification d'ancienneté*) if they follow a mobility programme for at least two years.

The Higher Education and Research Law (2013) re-affirms the importance of exploiting the results of research to serve society, and develop innovation and technology transfer (Articles 10 and 14). Higher education personnel can work for a fixed and renewable period with public and private laboratories while remaining in their schools in order to develop specific applications (Article 73). Activities carried out when providing entrepreneurship (*création d'entreprise*) and or science consultancy (*concours scientifique*) must be taken into account in the assessment of personnel researchers (Article 90).

Finally, the young innovative companies (*jeune entreprise innovante - JEI*) and young university enterprises (*la jeune entreprise universitaire - JEU*) schemes further strengthen cross-sector mobility. A JEI carrying out R&D enjoys tax and payroll reductions for highly skilled employees, such as engineers and researchers. Similarly, JEU status encourages entrepreneurship by students and those involved in research in higher education institutions because it carries significant exemptions from social security payments and tax deductions.

The following table summarises programmes designed to boost collaboration between academia and industry and to foster doctoral training in cooperation with industry.

Table 12: Collaboration between academia and industry

Measure	Description
Carnot Institutes Network (2006)	The creation of the Carnot Institutes aims to improve inter-sectoral knowledge circulation through partnership research, building on the model of the German Fraunhofer institutes. The Carnot institutes received in 2012 a new EUR 182 million endowment for actions to support SMEs and international cooperation under the Investments for the Future programme.
CIR (Crédit d'Impôt Recherche)¹⁷ (ongoing)	The CIR (<i>Crédit d'Impôt Recherche</i>) is a research tax credit which aims to encourage private sector companies to carry out more R&D. To be eligible, companies must carry out fundamental or applied research or experimental development, and have operations located within the European Economic Area. The expenses that are eligible include the personnel costs for researchers and research technicians. A factor of two is applied to the wages of young PhD holders for the first two years of their first long-term contract.
Joint research structures (ongoing)	Joint research structures (<i>structures communes de recherche</i>), of which there were 214 at early 2014, are partnerships between tertiary research institutions and

¹⁷ Available at: <http://www.industrie.gouv.fr/enjeux/innovation/credit-impot-recherche.php>

Measure	Description
	businesses. The two partners commit to pool their resources for a period which is longer than the standard for research projects or contracts. Generally, it is four to five years and is rolled over once or twice. The advantages lie not just in the integration of the two worlds and the pooling of financial resources, but also of infrastructures and know-how. These structures also facilitate the transfer of technology.
Technological research institutes (<i>instituts de recherche technologique</i>) (ongoing)	Technological research institutes bring together public and private laboratories dedicated to a specific area of technology, in which France aims to become a world leader. They help adapt higher education to business needs, thus encouraging the major French and foreign large companies to invest and create research jobs in France. The projects are co-financed by up to 50%. The total budget is EUR 2 billion for the period 2010-2020.

Source: Deloitte

8. Mobility and international attractiveness

In 2011, the percentage of doctoral candidates (ISCED 6) who were citizens of another EU-27 Member State was 8.3% in France compared with 18.4% among the Innovation Union reference group and an EU average of 7.7%¹⁸. In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 35.4% in France compared with 16.9% among the Innovation Union reference group and an EU average of 24.2%¹⁹.

Mobility is a key factor in the course of research, whether geographic, sectoral or interdisciplinary. In recognition of this, France has mechanisms to promote international recruitment strategies and mobility. France has increased the attractiveness of scientific careers through legislation, regulations and measures which:

- simplify visiting procedures for incoming third country students and researchers thanks to the “scientific visa” and “scientist residence permit”. Multi-year permits are available for foreign students and young researchers engaged in doctoral training;
- develop mobility mechanisms: in terms of recruitment, mobility within a foreign institution as part of a post-doc is essential to obtain a position as a lecturer in university or public research organisation;
- promote mobility in career paths: research organisations’ statutes state that years of experience spent abroad will stand researchers in good stead in obtaining promotion;
- encourage researchers to apply at European level, in particular through FP7 Marie Curie Actions (Framework Programme for research and technology), since these provide researchers with many opportunities for integration within research teams in other countries. Young researchers should also apply to “starting grant” calls of the European Research Council (ERC);
- increase the number of doctoral contracts through co-financing between associations, laboratories, local authorities and universities, and the European Structural Funds. The same goes for funding post-doctoral contracts, public and private research laboratories; and
- develop partnerships with third countries, e.g. the United States under the “Graduate Research Opportunities Worldwide (GROW)” programme of the National Science Foundation (NSF) of the US; Brazil, Canada and China.

The role of the “Investments for the Future” for doctorate holders is also important. For example, a large number of “Chairs of Excellence” are being created, as are “Industrial chairs”, a programme of the National Research Agency designed to strengthen public-private partnership and technological research (see Table 13 below for more detail on both mechanisms).

Public sector employers have been provided with tools to deploy a strategy for international recruitment via the ability to hire foreigners on permanent contract and to exempt foreign candidates for lecturer positions from accreditation requirements that normally apply for candidates working in a higher education institution in another country.

¹⁸ See Figure 1 “Key indicators – France”

¹⁹ Ibid

Measures aimed at attracting and retaining 'leading' national, EU and third country researchers

The table below present a key measure aimed at attracting and retaining leading national, EU and third-country researchers to France.

Table 13: Measures to attract and retain 'leading' national, EU and third country researchers

Measure	Description
Chairs of Excellence Programme	<p>The Chairs of Excellence Programme aims to attract to France the best researchers, professors, foreign or French, by offering, with the assistance of the host establishments and organisations, substantial resources to build up a team and to start an ambitious project with clear anticipated impact. The programme functions by means of a call for proposals open to all research disciplines. The 2012 programme proposed three types of chair:</p> <ul style="list-style-type: none"> - Long-term Junior; - Senior; - Short-term Senior.
Industrial Chairs	<p>The programme aims at providing accompanying support to research projects led jointly by public research institutions and businesses. It encourages the integration of eminent French (whether expatriate or not) or foreign professors into higher education and research institutions or research organisations, and reinforces the best initiatives developed in French higher education and research. The programme involves establishing a strong and lasting partnership between the research institution and businesses in a high priority and strategic area for the parties concerned. The aim is to provide more effective support to industrial research in all areas. The industrial chairs' objective is firstly to carry out fundamental and applied research, and secondly to ensure training through high-level research.</p> <p>Researchers from all disciplines can submit a project on any topic they choose.</p>

Source: Deloitte

Inward mobility (funding)

Salary is the main obstacle to inward mobility, together with the relatively high cost of living.

In the framework of the Investments for the Future programme, better salaries are being used to make it more attractive for researchers and for 'senior' researchers to come and remain in France and run projects. The Programme provides for open recruitment of international candidates, flexibility in the recruitment procedure and medium-to-long term contracts. Furthermore, favourable tax provisions motivate French companies to recruit high-level foreign researchers and thus to attract them to France.

Recruitment through competition to obtain the status of researcher in France could be seen as an obstacle for both incoming and outgoing researchers. However, a permanent research position remains very attractive and public institutions (universities and EPST) may recruit researchers on permanent contract. France has implemented the hosting Agreement scheme ("Scientific Visa"), facilitating the inward migration of third-country researchers to the country. Since 2011, France's consulates have granted a "VLS-TS visa" (Extended-stay research scholar visa) to holders of a master's degree or higher wishing to enter France to take up scholarships, engage in research or teach at university level. Public and private institutions of higher education and research organisations may use this visa category to bring doctoral candidates, research scholars and research faculty to France to perform research or teach at university level.

A residence permit entitled "research scholar visa" allows the holder to perform research and teaching activities in France under the terms of a hosting agreement. Foreign researchers may obtain residence permits for more than 1 year but no longer than 4 years. The permit's duration reflects the time required or expected to be required for the work to be delivered as described in the hosting agreement. The prefecture for the applicant's place of residence has jurisdiction (CESEDA, article L313-4)²⁰. All the beneficiary's family members are automatically eligible for a residence permit entitled "*vie privée et familiale*" (covering spouse and children who entered France as minors, article L. 313-8 of CESEDA as amended by law 2011-672 of June 16, 2011).

Further measures were taken in 2013. Prefects were instructed to make the issuance of multi-year stays the rule for foreign students from June 2013, and the code on the entry and stay of aliens and asylum (CESEDA) was amended following the adoption of the 2013 Law on Higher Education and Research: a student from a non-EU country may now obtain a temporary residence permit (APS) for a period of 12 months if he/she has successfully completed a course of study leading to a degree at least equivalent to a master and wants to

²⁰ Available at: <http://www.enseignementsup-recherche.gouv.fr/cid56284/accueil-en-france-des-scientifiques-etrangers.html>

complement their study with their first professional experience. They are not limited to a single job or a single employer (Art. 86 of the law).

The table below presents the key measure and policies in support of researchers' inward mobility.

Table 14: Measures to improve inward mobility

Measure	Description
Post-Doctoral Return Programme (ongoing)	The Post-doctoral Return Programme targets young French researchers, but also young foreign researchers who defended their thesis in France. For detailed information, see chapter 6 "Working conditions".
Hosting foreign researchers	
<p>In 2013, The proportion of young foreign researchers recruited by Public Scientific and Technological Institutions was approximately 1/5 and by universities 1/6.</p> <p>Since the University Freedoms and Responsibilities Act (2007), universities have had the tools to conduct their own recruitment policy, and be more attractive nationally and internationally. In addition to these tools, the procedure for applying for a Scientific Visa was simplified by the entry into force of Act 2011-672 (of 16 June 2011) on immigration, integration and citizenship.</p> <p>France has 20 EURAXESS Services Centres to provide foreign researchers with the information they need on everyday life, children's education, accommodation, cultural integration and French language courses.</p>	

Source: Deloitte

Outbound mobility

Mobility to a foreign institution is an essential asset for a young researcher wanting subsequently to obtain a position as a lecturer in the university or as a researcher in an EPST. Young French researchers are encouraged to apply for mobility programmes, short and long, depending on their post-doc discipline.

Promotion of 'dual careers'²¹

There are no government measures specifically facilitating dual careers, though some universities do have such programmes (see chapter 3 "Women in the research profession").

Portability of national grants

ANR fellowships are not portable. The agency may not pay researchers to carry out research in other EU countries. Researchers living in another EU country may answer an ANR call for proposal, but must lead the project in France.

Access to cross-border grants

ANR fellowships are open to non-residents, as are those of all French research organisations.

²¹ Researchers face a 'two-body problem' when moving. The challenge is to find positions for both members of a couple.