



Researchers' Report 2014

Country Profile: Spain



TABLE OF CONTENTS

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

1. Key data

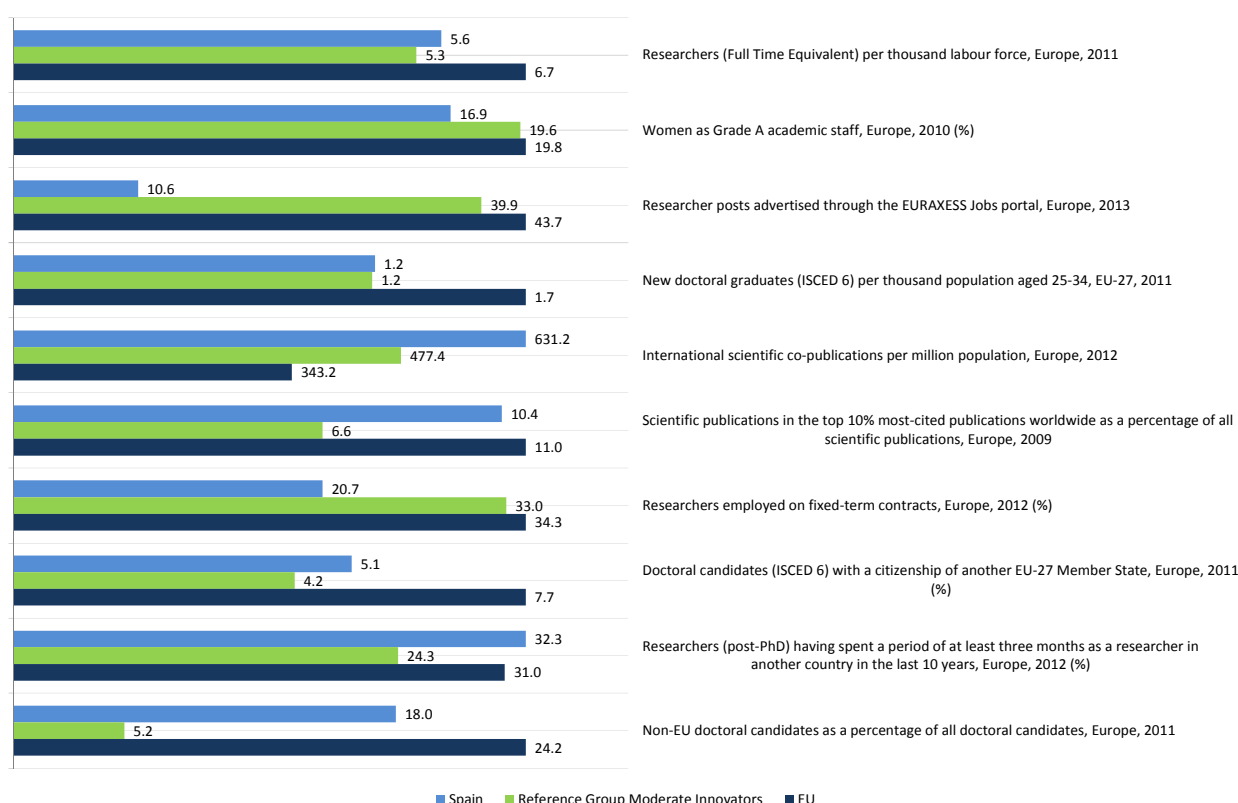
National R&D intensity target

"Spain has set a national R&D intensity target of 3%¹, within which public sector R&D investment would reach 1% and business R&D investment 2% of GDP by 2020. In 2011, Spanish R&D intensity was 1.33%². Public sector R&D intensity amounted to 0.64% and business R&D intensity 0.70%. Both values have fallen slightly in 2011 compared to 2010. (...) Private R&D expenditure has also been seriously affected by the economic crisis. Business R&D expenditure in real terms reached a peak in 2008. Spanish firms more than doubled their R&D expenditure in real terms over the period 2000-2008. However, following the economic crisis and liquidity constraints, business R&D investment fell by 6.27% in 2009 and by another 0.81% in 2010. Firms in food, automobiles, and construction, have undertaken the strongest cuts."³

Key indicators measuring the country's research performance

The figure below presents key indicators measuring Spain's performance on aspects of an open labour market for researchers against a reference group and the EU average⁴.

Figure 1: Key indicators – Spain



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, Croatia, Czech Republic, Greece, Hungary, Italy, Lithuania, Malta, Poland, Portugal, Slovakia and Spain show a performance below that of the EU average. These countries are "Moderate innovators"⁵.

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.

¹ According to data provided by the European Commission. However, the Spanish government regards 2% as the official figure.

² In 2012, R&D expenditure was 1.3% (Eurostat, 2014).

³ European Commission (2013), "Research and Innovation performance in EU Member States and Associated countries. Innovation Union progress at country level 2013"

⁴ The values refer to 2013 or the latest year available

⁵ European Commission (2014), "Innovation Union Scoreboard 2014"

Table 1: Human resources – Stock of researchers

Indicator	Spain	EU Average/Total
Head Count per 1 000 active labour force (2011)	9.53	10.55
Head Count (2011)	220 254	2 545 346
FTE per 1 000 active labour force (2011)	5.64	6.75
Full time equivalent (FTE) (2011)	130 235	1 628 127

Source: Deloitte

Data: Eurostat

2. National strategies

The Spanish Government has put in place a range of 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 Spain's R&D targets, to promote attractive working conditions, and to address gender and dual career aspects.

Table 2: National strategies and laws

Measure	Description
At national level	
Strategies	
Spanish Science, Technology and Innovation Strategy (2013-2020)	The Science, Technology and Innovation Strategy is a seven-year strategy approved by the Spanish Government on 1 February 2013. It aims, among other overarching objectives, to acknowledge and promote talent in R&D&I and to promote researchers' employability. To achieve that goal, its specific objectives are to train researchers, to foster mobility and promote career development, and to multiply career opportunities for researchers.
State Scientific and Technological Research, and Innovation Plan (2013-2016)	The plan implements the Science, Technology and Innovation Strategy (see above) until 2016. Specifically aimed at training researchers, the plan includes measures to promote doctoral training in cooperation with industry, and entrepreneurship, as well as to promote research management training. To foster mobility and promote career development, the plan encourages researchers from public institutions to spend some time working in the business sector. It also includes measures to attract high-level third country scientists.
Strategy for the Sustainable Economy (2009)	The Strategy for the Sustainable Economy is a key government tool for achieving economic growth compatible with sustainable development. Key priorities of this national strategic reform programme were to increase investments in R&D and design a new innovation strategy.
University 2015 Strategy⁶ (2010)	The University 2015 Strategy is a Spanish Government initiative for modernising universities in Spain through the coordination of the autonomous regional university systems and the development of a modern Spanish University System. The Strategy promotes research activities and innovation in Spanish universities while encouraging training activities and knowledge transfer from the academic world to companies.
Laws	
Law supporting entrepreneurship and internationalisation (2013)⁷	Among the provisions of this law are tax incentives for companies carrying out research and on earnings from intangibles (e.g. licences and patents) and on inbound mobility. The law sets categories of "highly qualified" staff from non-EU countries for which companies may obtain residence permits. Staff to work on significant research and innovation projects are specifically covered ⁸ .
Law on a Sustainable Economy (2011)	The Law on a Sustainable Economy promotes R&D and innovation through the implementation of public procurement processes. It facilitates access to research patents and to commercial exploitation of research results. It also simplifies administrative procedures and promotes technical and professional training.
Law on Science, Technology and Innovation (2011)	The Law on Science, Technology and Innovation describes a stable and predictable science career for researchers as well as a more efficient and effective R&D

⁶ Available at: <http://www.educacion.gob.es/dctm/eu2015/2010-eu2015-ingles.pdf?documentId=0901e72b804260c4>

⁷ Available (in Spanish) at: <http://www.exteriores.gob.es/Embajadas/ELCAIRO/es/InformacionParaExtranjeros/Paginas/Visados-Ley-14.aspx>

⁸ Available at: <http://www.boe.es/dias/2013/09/28/pdfs/BOE-A-2013-10074.pdf>

Measure	Description
	system. The law contains provisions to foster partnerships between academia and industry, and regulates mobility patterns between public entities and the private sector.

Source: Deloitte

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 16.9% in Spain compared with 19.6% among the Innovation Union reference group and the EU average of 19.8%⁹.

Gender equality provisions are included in national laws, and universities and research institutions are obliged by the law to prepare and put in practice relevant action plans.

The Spanish government has created a “Women and Science Unit” aiming to promote gender aspects of science, technology and innovation by:

- Promoting the presence of women in all spheres of science, technology and innovation, based on their merits and skills, establishing mechanisms for eliminating bias, barriers and disincentives;
- Promoting the inclusion of gender as a cross-cutting category in scientific research, as well as specific research in the field of gender and women's studies;
- Promoting the inclusion of gender as a cross-cutting category in technological developments and innovation.

Measures to ensure a representative gender balance

The Law on Science, Technology and Innovation and the Equality Law (*Ley de Igualdad, 2007*) provide for gender balance in the nomination of evaluation committees, councils and bodies. Universities and public research institutions are bound by the Law to prepare and implement gender Action Plans. Incentives are given to institutions that can prove an improvement in gender balance figures.

Apart from the legislation, published reports provide information about gender statistics (e.g. ‘Statistics on public tenders in R&D broken down by gender’) while the Ministry of Economy and Competitiveness in 2011 published a White Paper on the situation of women in Spanish science (*Libro Blanco sobre la situación de las mujeres en la ciencia española*). The White Paper points out that gender equality in all spheres of social life and within the science and technology sector is a major issue for the Spanish economy and society. Despite the fact that there are more women university students than men and they do better academically, they make up fewer than 30% of those employed in some professions, such as engineering and experimental sciences.

A 2013 ordinance implementing the “State Programme of Talent Promotion and Employability in R+D+I” (which is part of the “State Scientific and Technological Research, and Innovation Plan”) specifically mentions that evaluation panels should attempt to achieve gender balance in their composition.

Parental leave

As is the case with social security benefits (see chapter 6 “Working conditions”), provisions for maternity leave are also included in all public R&D calls.

4. Open, transparent and merit-based recruitment

Recruitment system

The Spanish researcher recruitment system is somewhat segmented due to the fact that the Autonomous Communities have their own competencies for R&D.

Open recruitment in institutions

Transparency in recruitment is governed by Law 19/2013 “on transparency, access to public information and good governance”. This law applies to public universities, independent organisations and state agencies belonging to the general, regional or local administration. Any organisation receiving public subsidies of more

⁹ See Figure 1 “Key indicators – Spain”

than EUR 100,000, or for whom public subsidies represent more than 40% of their annual income, are required to make their procedures public (active dissemination of information) and ensure free access to the related information. This is designed to support the open recruitment of researchers in publicly funded organizations

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

Table 3: 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/No	Job vacancies are sometimes published online.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	Yes	EURAXESS is being used increasingly by many institutions to advertise their vacancies.
– publish job vacancies in English	Yes	Some vacancies are sometimes published in English.
– systematically establish selection panels	Yes	The public sector always establishes selection panels.
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	Guidelines are established and followed accordingly.
– publish the composition of a selection panel (obliging the recruiting institution)	-Yes	This is required in some cases, especially for civil servants in public sector posts.
– publish the selection criteria together with job advert	Yes	Guidelines and weighting criteria are often included.
– regulate a minimum time period between vacancy publication and the deadline for applying	Yes	The exact procedure depends on the type of post.
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	Yes	This is always the case in the public sector.
– offer applicants the right to receive adequate feedback	Yes	-
– offer applicants the right to appeal	Yes	-

Source: Deloitte

Data: Information provided by national authorities

EURAXESS Services Network

In 2013, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 10.6 in Spain compared with 39.9 among the Innovation Union reference group and an EU average of 43.7¹⁰.

Information on entry conditions, transfer of social security and pension contributions, accommodation, administrative assistance, etc. is available in the “Guide for Foreign Researchers in Spain” (2014)¹¹, prepared by the Spanish National Science Foundation (FECYT) which is the Bridgehead Organization (national coordinator) of the Spanish Network. This guide is updated approximately every two years and can be found on the Spanish EURAXESS portal¹² which is also managed by FECYT.

The network of service centres provides personal assistance to newly arrived researchers, including (sometimes) welcome information packages. In Spain, it is not mandatory for public research bodies to publish online the positions available on the EURAXESS Jobs portal. Most institutions have their own on-line research job advertisement system, although many are related to the information provided on the EURAXESS Jobs portal.

¹⁰ See Figure 1 “Key indicators – Spain”

¹¹ Available at: <http://www.fecyt.es/fecyt/detalle.do?elegidaSiguiente=&elegidaNivel3=:SalaPrensa;publicaciones;guiasymanuales&elegidaNivel2=:SalaPrensa;publicaciones&elegidaNivel1=:SalaPrensa&tc=publicaciones&id=guia%20investigadores%20extranjeros%202011>

¹² Available at: <http://www.euraxess.es/eng/services/guide-for-foreign-researchers> ; <http://www.euraxess.es/eng/services/guide-for-foreign-researchers-in-spain-2014>

In 2013, Spanish organisations published a total of 904 positions on the EURAXESS Jobs portal. This represents 2.25% of the total number of jobs published in that year. The Spanish EURAXESS portal publicises the job positions that are advertised on the EURAXESS Jobs portal; it also offers information on national and European calls.

5. Education and training

Measures to attract and train people to become researchers

The JAE-intro programme, run by the Spanish National Research Council (CSIC), aims to introduce undergraduate students to research methods. It offers grants of up to two months at the Spanish National Research Council. In addition, the Ministry of Education has two programmes (*Arquímedes* and *Young Researchers*) that recognise undergraduate students who show outstanding research potential.

In order to attract and train secondary school students to become researchers, the Ministry of Education organises national Olympics in mathematics, physics and chemistry. Together with the Spanish Foundation for Science and Technology (FEYCT), the Ministry of Education also organises summer campuses at university centres. In 2013, 1 808 students were due to take part in this programme.

In order to increase the number of students taking science to a doctoral level, the Spanish government has implemented the Master Plan for Mentoring and Guidance of Students. The Spanish government has not adopted specific policies to increase female representation. However, some Autonomous Communities have adopted measures to increase the number of women with doctorates. For example, in Asturias 64% of all PhD students are women.

Under the Law on Science, Technology and Innovation, all universities and public research institutions are required to implement Gender Balance Plans (see chapter 3 “Women in the research profession”) by setting concrete targets for pre-doctoral researchers (of both sexes).

Doctoral graduates by gender

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

Table 4: Doctoral graduates by gender

Indicator	Spain	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2011)	1.2	1.7
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2011)	1.2	1.6
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2011)	1.3	1.8

Source: Deloitte

Data: Eurostat

Funding of doctoral candidates

The table below presents different funding paths accessible to Spanish doctoral candidates.

Table 5: Funding opportunities for doctoral candidates

Foundation	Description
Stipend/Grant	
FPU Programme, Ministry of Education (ongoing)	The Ministry of Education runs the FPU programme (<i>Formación de Profesorado Universitario</i>) to train future university professors, including the presentation of a doctoral thesis. It includes short-term visiting fellowships and tuition fee grants. In 2012, 50 of a total of 800 grants went to non-EU candidates. There were no calls in 2013; In addition, the programme funds 500 visiting fellowships for a period of between two and four months, and 40 visiting fellowships for a period of between six and nine months. In 2011, the number of FPU grants was 945, or 1.37% of all doctoral candidates.
Secretariat of State for Research, Development and Innovation, Ministry of the Economy and Competitiveness (ongoing)	The Secretariat of State for Research, Development and Innovation of the Ministry of the Economy and Competitiveness supports researcher training, including the presentation of a doctoral thesis. Until 2013, this was known as the FPI programme (<i>Formación de Personal Investigador</i>), but is now known as <i>Ayudas para contratos predoctorales para la formación de doctores</i> , i.e. grants for pre-doctoral contracts for doctoral training. In 2013, 940 candidates were successful. In addition, the Secretariat of State funds visiting fellowships for a period of between two and four months, including tuition fees.
The Spanish National Research Council (CSIC)	The Spanish National Research Council (CSIC) runs the JAE-Predoc programme to train researchers, including the presentation of a doctoral thesis. This programme provides grants lasting a period of three years for the recruitment of pre-doc juniors to work for the Spanish National Research Council. In 2011, the number of JAE-Predoc grants was 154, or 0.22% of all doctoral candidates.
Other	Grants associated with research projects.
Employment contract	
The three programmes listed above were until 2013 based on a two-year grant + two-year contract, but now provide four-year employment contracts by 2014.	

Source: Deloitte

Measures to increase the quality of doctoral training

Doctoral studies include quality assurance, monitoring and follow up activities for the doctoral students. In an effort to increase the quality of doctoral training, the Spanish government makes awards to PhD programmes for excellence; it funds participation in international doctoral schools (within the International Campus of Excellence Programme that aims to improve the international competitiveness of Spanish university campuses); it also promotes public-private collaboration agreements, including training provisions for research staff.

Skills agenda for researchers

The Spanish Government has adopted the European Qualifications Framework (EQF). The Spanish Framework of Qualifications for Education (MECES) aims at structuring learning qualifications throughout the different levels of education. The framework is based on the Dublin Descriptors, which define the level of learning required for each stage of the higher education system (Bachelor, Master and Doctorate).

6. Working conditions

Measures to improve researchers' funding opportunities

The following table presents measures aimed at promoting researchers' funding opportunities at national and regional level.

Table 6: Measures to improve researchers' funding opportunities

Measure	Description
At national level	
Laws	
The Law on a Sustainable Economy (2011)	The Law on a Sustainable Economy promotes public procurement calls related to the promotion of R&D&I activities.
The Law on Science, Technology and Innovation (2011)	The Law on Science, Technology and Innovation established two financing agencies: – The State Agency for Research (<i>Agencia Estatal de Investigación</i>): to promote new knowledge in scientific and technological research (planned);

Measure	Description
	– The Centre for Industrial Technology Development (<i>Centro para el Desarrollo Tecnológico Industrial</i>): to promote innovation and experimental developments. The law also covers the promotion of researchers' mobility between universities, public research institutions and regional organisations. Researchers are allowed to work for up to five years in other public or private, national or international organisations.
Programmes	
Ayudas para contratos para la formación posdoctoral y las ayudas para la incorporación de jóvenes doctores (Grants for post-doc training and for incorporation of recent post-docs) (ongoing)	These grants replaced the Juan de la Cierva programme in 2013. That provided grants for three years; these are consecutive programmes of two years each. The postdoctoral training grants are designed to enable recent PhDs to obtain additional training at high level at centres other than those where they did their pre-doctoral training and with a view to increasing their specialisation and internationalisation. The second type of grant will be a follow-on grant from the first (to be launched in 2015) accompanied by additional finance to meet the costs associated with the research project. It is expected that making this grant to the post-doc researcher should be of mutual benefit to the beneficiary and to the research centre and its existing research team.
JAE-doc Programme (ongoing)	This programme provides grants lasting for a period of three years for the recruitment of post-doc juniors to work for the Spanish National Research Council. There were no calls in 2013.
Ramón y Cajal Programme (ongoing)	The <i>Ramón y Cajal</i> programme provides grants for a period of five years for the recruitment of candidates who have undertaken research placements at R&D centres other than those included in the programme for a period of at least 24 months after having obtained their PhDs, or who have been awarded full PhDs at foreign universities and have worked for at least 24 months after getting their PhD degree. Since 2012, the programme has also included financial support for the creation of permanent jobs. In 2012, the Ramón y Cajal programme increased the amount of each grant by 10%. In addition, the programme includes a EUR 100 000 sum per grant to support a long-term contract. In 2012, the number of Ramón y Cajal grants was 175. In 2013 provisions were introduced to allocate places by scientific discipline.
Torres Quevedo Programme (ongoing)	This programme provides a subsidy to private institutions for three years in order to employ post-doc researchers for viability studies or experimental development projects, or industrial research activities. In 2012, the number of <i>Torres Quevedo</i> grants was 330.
Contratos de Personal Técnico de Apoyo a la I+D+I	There is EUR 6.48 million in 2014 for Contratos de Personal Técnico de Apoyo a la I+D+I, i.e. funding for RDI technical support personnel with a view to increasing the productivity of scientific and technical equipment. Grants are for three years to hire technical support personnel. The annual amount is EUR 12,000 which can be put towards wages and social security costs.

Source: Deloitte

Remuneration

Since 1984, researchers in public higher education institutions have been considered to be public sector employees and therefore have similar remuneration packages. They can also receive complements to their salary depending on their productivity (*complemento de productividad*). As there was an absence of performance evaluation criteria, the 2011 Law on Science, Technology and Innovation incorporates criteria for evaluating researchers' merits. Researchers are also eligible to further increase their income by receiving royalties from patents.

For further information, see the country profile on remuneration of researchers from the MORE2 study on the EURAXESS website.¹³

Researchers' Statute

Since 2006, *Real Decreto 63/2006* has guaranteed an in-training statute for researchers (*Estatuto del personal investigador en formación*). The Law on Science and Technology creates a more coherent researcher statute.

¹³ <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

Under that law, institutions are also required immediately to employ researchers at all levels of study by signing four-year employment contracts. The law also foresees the creation of special contracts for recruiting distinguished and well-known researchers to come and work in Spanish host institutions.

‘European Charter for Researchers’ & ‘Code of Conduct for the Recruitment of Researchers’

The Law on Science, Technology and Innovation includes provisions on the adoption and implementation of the ‘Charter and Code’. Additionally, the EURAXESS Network in Spain through 76 Service Centres (present in most Autonomous Communities) actively promotes the EURAXESS Rights initiative on the implementation of the ‘Charter & Code’. So far, 50 institutions have endorsed the ‘Charter & Code’, and eight have been awarded the ‘HR Excellence in Research’ logo.

Autonomy of institutions

The Spanish System of Science and Technology (SECyT) is an aggregation of systems of the general administration of the State and the Autonomous Communities, with the regional governments having competence for R&D. The 2011 Law on Science, Technology and Innovation improved mechanisms for coordination of the different national and regional policies. The law accords the Autonomous Communities the right to:

- Sign agreements between public and private agents;
- Subscribe to collaboration, cooperation and shared-management agreements with the State;
- Have their staff access benefits derived from industrial property; and
- Participate in Scientific and Technological Policy Councils.

All institutions have autonomy in recruiting personnel, though they are subject to regulatory requirements set at regional and national level, bearing in mind that at the higher levels employees of higher education institutions are civil servants.

Career development

The Law on Science, Technology and Innovation creates a clear researchers’ career path by regulating the contractual agreements signed between the researchers and the host institutions. Under this scheme, researchers are considered as civil servants, but the specificities of the research profession are taken into account. Moreover, researchers always have the option of choosing a non-civil servant career path¹⁴.

In Spain, the career of researchers in public universities and research institutions begins through a first temporary pre-doctoral contract of up to four years ending with a PhD degree. Subsequently, researchers may sign contracts to access the SECyT and stay in the SECyT for up to five years. At that point, the researcher undergoes two performance evaluations. A positive evaluation will provide the researcher with access to a fixed contract and thus access to the lower levels of the civil service through internal promotion. Under the new law, when applying for public positions in Spain, candidates from all EU countries have the right to be assessed in English and not in Spanish/other recognised regional languages.

Shift from core to project-based funding

Researchers who are involved in project-based research have access to publicly funded contracts with clear descriptions and activities’ planning. This is the case for the FPU programme (*Formación de Profesorado Universitario*) and the grants for pre-doctoral contracts for doctoral training (see chapter 5 “Education and training”), as it is also for the Grants for post-doc training and for incorporation of recent post-docs, the JAE-doc programme and the *Torres Quevedo* programme (see chapter 6 “Working conditions”).

¹⁴ In Spain, a researcher can be employed by an institution under one of the following schemes:

- Grants outside the Researchers In-training Statute (*Estatuto del personal investigador en formación, EPIF*);
- Grants/contracts within the Researchers In-training Statute (*Estatuto del personal investigador en formación*);
- Under regional pre-doctoral grants/contracts (2 year grant + 2 year contract) - sometimes also, under a 1+ 3 or 0 + 4 arrangements;
- Under temporary contracts up to 5 years;
- Under fixed employment contracts;
- As a civil servant.

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

Researchers under employment contracts or receiving funding are granted social security coverage, including sickness and unemployment benefits. Old-age benefits are only available for those on employment contracts. As a result of the changes to the funding system made in 2013, those receiving pre-doctoral grants are now on employment contracts and therefore fully covered – which was not the case previously.

7. Collaboration between academia and industry

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

Table 7: Collaboration between academia and industry

Measure	Description
<i>At national level</i>	
EMPLEA (ongoing)	This programme is designed to promote talent and employability through incentives for hiring and training R+D+I managers in a wide range of entities. This including hiring experts in transferring and adding value to knowledge, including the preparation of proposals, provision of advice, management and provision of ongoing impetus to Horizon 2020 projects. The support takes the form of low-interest loans and a subsidy towards the cost of training these experts.
ERDF-Inninterconecta Programme (ongoing)	The programme finances integrated experimental development projects, of a large-scale, strategic nature, whose aim is the development of new technologies in forward-looking areas of technology with economic and commercial prospects at international level and representing an important technological and industrial advance for the regions receiving funding from the "R&D&I by and for the benefit of Companies - Technology Fund" Operating Programme.
INNINCORPORA programme (Technicians) (ongoing)	This programme funds the hiring of technicians by the private sector for a minimum of one year and a maximum of three. In 2012, the total budget was EUR 91.2 million (EUR 1.2 million as grants and the rest of the amount as subsidised loans). There were no calls in 2013. The Innincorpora programme allows for mobility between the public and the business sector. The aim of the programme is to engage highly-skilled staff in private companies (as well as technology centres, science parks and business associations) and support knowledge transfer between academia and the business sector.
INNFLUYE sub-programme (ongoing)	INNFLUYE funds the creation and strengthening of Spanish Technology Platforms, i.e. public-private groups which work on developing and updating R&D agendas and innovation priorities for their particular sector. The total budget allocated for 2013 was EUR 1.5 million.
INNPACTO (ongoing)	INNPACTO fosters steady cooperation between research institutions and firms. It supports collaborative experimental development projects focused on market demand. Projects are multi-year and funded with grants and subsidised loans. In 2012, the total budget was EUR 851.7 million.
Innpronta Programme (ongoing)	The Innpronta Programme falls under the Centre for the Development of Industrial Technology (<i>Centro para el Desarrollo Tecnológico Industrial</i>). It offers grants to promote stable public-private cooperation in R&D. The programme finances large industrial research projects of a strategic nature in the following priority areas: energy, the environment and climate change, biotechnology, health and food. The multi-year grants are for the development of new technologies in forward-looking areas with economic and commercial prospects at international level. The budget was EUR 102 million for 2011.
Programa Estatal de I+D+I Orientada a los Retos de la Sociedad (Government R+D+I Programme to promote Societal Networks) (ongoing)	This Programme is designed to stimulate the creation of interdisciplinary and cross-sectoral critical mass in research into the major issues facing society, and establish closer relations between research and commercial applications of innovation and technology. The networks deal with issues such as health and wellbeing; food security and quality, sustainable food production and natural resources, and marine and maritime research; safe, efficient and clean energy; sustainable, intelligent and integrated transport; climate change and efficient use of resources and raw materials; social change and innovation; the digital society; security, protection and defence. The Programme distinguishes between Collaboration Networks, Business Networks and Research Networks, but Research Networks do not involve collaboration with business. The support takes the form of subsidies and soft loans.

Measure	Description
At national level	
Retos-Colaboración (2014)	A call was launched in early 2014 for projects to network research bodies and companies with a view to developing new technologies and promoting actual exploitation in new products and services. The goal is to achieve the critical mass across disciplines and assist in setting up innovative companies. The total budget is EUR 548 million. This scheme falls under the Societal Networks Programme.
Subprograma Estatal de I+D+I Empresarial (Government Sub-Programme for Business R+D+I)(ongoing)	These soft loans primarily target businesses with R&D projects, but they can sub-contract this activity to research entities – and obtain a higher subsidy for projects with a high research content. The amount of the loan as a percentage of the project is higher if the project is co-financed by the European Regional Development Fund. The incentive is available to any industrial sector.
The CENIT Programme (ongoing)	The CENIT Programme is part of the INGENIO 2010 initiative launched by the government in 2006 to stimulate cooperation in R&D&I among businesses, universities, public or private research and technology centres. CENIT has the following characteristics: i) industrial research projects with mandatory and contractual cooperation between companies and public, private or other research groups; ii) at least four independent firms (two of them SMEs) and two public research institutions; iii) minimum commitment of four years; iv) minimum budget of EUR 20 million; and v) at least 20% of the budget must be developed by research organisations or technology centres under contract. Managed by the CDTI, CENIT is a competitive program with grants of up to 50% of the budget of the projects. There were six calls during the period 2006-2010 with EUR 1 072 million of grants. The last projects will be completed in 2014.
Torres Quevedo Programme (ongoing)	This programme gives a subsidy to private institutions for three years in order to employ post-doc researchers for viability studies or experimental development projects or industrial research activities. In 2012, the number of Torres Quevedo grants was 330.

Source: Deloitte questionnaire and Ministry of Economy and Competitiveness website:
http://www.micinn.es/stfls/MICINN/Investigacion/FICHEROS/PROGRAMA_TRABAJO_011_12-01-11.pdf

The Science, Technology and Innovation Law includes a section focusing on human resources dedicated to research. Its main new features include the ambitious task of regulating mobility between public entities and the private sector, creating specific employment contracts for researchers and the undertaking, in a clearly defined manner, of performance evaluations for career professionals in the public research entities of the General State Administration.

8. Mobility and international attractiveness

In 2011, the percentage of doctoral candidates (ISCED 6) with citizenship of another EU-27 Member State was 5.1% in Spain compared with 4.2% among the Innovation Union reference group and an EU average of 7.7%¹⁵. In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 18.0% in Spain compared with 5.2% among the Innovation Union reference group and an EU average of 24.2%¹⁶.

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

The table below summarises key measures aimed at attracting and retaining leading national, EU and third-country researchers.

Table 8: Measures to attract and to retain leading national, EU and third-country researchers

Measure	Description
“Clarín” de ayudas postdoctorales del Principado de Asturias Programme (Movilidad B) (ongoing)	The Clarín programme aims to attract researchers currently working in foreign institutions to pursue a researcher career in the Autonomous Community of the Principality of Asturias.

¹⁵ See Figure 1 “Key indicators – Spain”

¹⁶ Ibid.

Measure	Description
ICREA Programme (Catalonia) (ongoing)	The ICREA programme aims to attract researchers from around the world, based on their scientific talent, to move to and work in Catalonia.
Ikerbasque – Basque Foundation for Science (Basque Country) (ongoing)	The Basque Foundation launches calls to attract and retain distinguished researchers, regardless of their nationality.
Ramón y Cajal Programme (ongoing)	See chapter 6 “Working conditions”.

Source: Deloitte

Finally, the Spanish Government is planning to create a programme at national level (an extension of the existing *Severo Ochoa Programa* in Asturias) which will target high-level scientists, regardless of their nationality.

Inward mobility (funding)

In Spain, the major obstacles to researchers’ mobility are either legal problems related to visa acquisition or language barriers, especially in connection with administrative procedures. In 2009, the government implemented the Scientific Visa Directive via the Spanish Immigration Act 2/2009.

The table below summarises key measures aimed at supporting researchers’ inward mobility.

Table 9: Measures supporting researchers’ inward mobility

Measure	Description
Acción Estratégica de Salud Sara Borrell¹⁷ (ongoing)	The Sara Borrell Action is part of the Strategic Health Programme. It supports health research centres wanting to employ national or foreign doctors with experience in health research for a maximum three-year period.
Acción Estratégica de Salud Río Hortega¹⁸ (ongoing)	The Río Hortega Action is part of the Strategic Health Programme and aims at engaging health professionals in research teams to obtain experience in research.
CSIC-JAE-Doc¹⁹ (ongoing)	Under the CSIC-JAE-Doc programme, the Spanish National Research Council (CSIC) offers three-year postdoctoral contracts to national and foreign post-doctoral researchers, including the preparation of a PhD thesis.
Law supporting entrepreneurship and internationalisation (2013)	See chapter 2 “National Strategies”.
Mobility of Foreign University Lecturers or Researchers in Spanish Centres²⁰ (ongoing)	This programme comes under the Ministry of the Economy and Competitiveness. It targets foreign researchers and lecturers coming to Spain, either during a sabbatical year (for senior researchers or professors) or by signing employment contracts (for young doctors) for a period of nine to eighteen months.
Programme I3 - Incentives for the incorporation and strengthening of research activity (ongoing)	Programme I3A supports research institutions to permanently employ national or foreign post-docs students.
Torres Quevedo²¹ (ongoing)	This budget line grants a subsidy to private companies, technology centres, business associations or scientific parks for a maximum of three years in order to employ national or foreign researchers for experimental developments, viability studies or industrial research. After the period of three years, the contract must become permanent.
1. Contrato de acceso al Sistema Español de Ciencia, Tecnología e Innovación (ongoing) 2. Contrato de investigador distinguido (ongoing)	These are two types of contract – access to the SECyT and the distinguished researcher contract – developed under the Spanish Law on Science, Technology and Innovation. They are open to both nationals and foreign researchers. The first is for researchers who obtained their PhD in the previous five years.

Source: Deloitte

Outbound mobility

The table below presents measures aimed at encouraging researchers to spend some time in another country.

¹⁷Ministry of Economy and Competitiveness

¹⁸ Ibid

¹⁹ Spanish National Research Council (CSIC)

²⁰ National Human Resources Mobility Programme, Ministry of Economy and Competitiveness

²¹ Ibid

Table 10: Measures supporting researchers' outbound mobility

Measure	Description
<i>At national level</i>	
FPI, FPU and JAE pre-doctoral grants	See chapter 5 "Education and training".
Human Resources Subprogramme Salvador Madariaga (ongoing)	The Ministry of Education runs this programme that funds researchers wanting to obtain a PhD at the European University Institute in Florence. The funding is for 48 months (24 month grant and another 24 month employment contract). In 2012, the total budget was EUR 391 000. There were no calls in 2013.
Mobility of Spanish university lecturers and researchers in foreign centres (ongoing)	In this programme, senior researchers with permanent positions in a public research institution can apply to spend three to twelve months at a foreign institution. Young researchers with a temporary or permanent contract in a public research institution can also apply for a four- to ten-month stay at a foreign institution. In 2012, the total budget was EUR 7.59 million. There were no calls in 2013.
Postdoctoral mobility in foreign centres (ongoing)	This subprogramme for post-doctorates covers a maximum stay of one month per year. It includes post-doc positions offered by the Fulbright Commission, the <i>Cátedras Príncipe de Asturias</i> (Prince of Asturias Chairs) and the International Computer Science Institute.
Subprogramme of specialisation in International Organisations (ongoing)	This subprogramme funds researchers, technologists, and science and technology managers to spend one to two years in an international scientific institution in another country. Following this period, the beneficiary has to develop a one-year project in a Spanish public research centre or technology-based enterprise.

Source: Deloitte

Promotion of 'dual careers'

There are no specific national public programmes for the promotion of researchers' dual careers in Spain. However, as part of the transposition of the Scientific Visa Package, researchers with a hosting agreement can make use of a fast-track visa procedure via the *Unidad de Grandes Empresas y Colectivos Estratégicos* which can process the necessary family residence (temporary) and work permits (linked to the researcher's main permit).

Portability of national grants

Publicly funded R&D grants and fellowships provided by the Ministry of the Economy and Competitiveness are always linked to Spanish R&D centres. The legal and grant beneficiaries are the Spanish institutions and consequently, the grants are not portable to other EU countries. However, the research can be carried out in foreign countries, subject to the terms of the relevant call.

Access to cross-border grants

All relevant calls published by the Ministry of Economy and Competitiveness are open to researchers from all around the world without any restriction as to nationality. The only prerequisite is that the host R&D centre needs to be Spanish.