



DG Research and Innovation

Monitor human resources policies and practices in research
(LOT 1 Part 1)

The Researchers Report 2012

A selection of good practices



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Introduction

In the framework of the 2012 Deloitte questionnaire, Deloitte asked the members of the ERA Steering Group on Human Resources and Mobility (SGHRM) to identify up to five Good practice examples in a standardised format in a number of pre-defined categories. Deloitte received in total proposals for 70 Good Practices, covering all monitoring categories (requested in the questionnaire). Only a few Good Practices showed clear results (in response to the standard objective).

A Good Practice example is defined as a policy representing the most effective way of achieving a specific objective. To be considered a Good Practice, a measure and/or policy must be:

- Well-developed, implemented, and evaluated;
- Successful (showing positive results in relation to a specific objective);
- Verifiable (showing evidence of effectiveness and/or success achieved);
- Have a possible multiplying effect or transference to other (policy) areas.

The 2012 Researchers Report includes a selection of 49 Good Practices, taking into account:

- National context;
- Geographical distribution;
- Maturity of the country in the research profession; and
- Potential exploitation of the example (application to other countries and contexts).

The Good Practices are grouped and presented according to the topics of the 2012 Researchers Report:

- Increasing the stock of researchers in Europe;
- Women in the research profession;
- Open, transparent and merit-based recruitment;
- Education and training;
- Working conditions;
- Collaboration between academia and industry;
- Mobility and international attractiveness.

1. Increasing the stock of researchers in Europe

Table 1: Government measures to promote science throughout the education system - Ireland

Title of the measure	Government measures to promote science throughout the education system
Category	Increasing the stock of researchers in Europe
Country	Ireland
<p>The Irish government has introduced the following policy measures to attract and train young people (primary, secondary, higher education) to become researchers in line with its National Strategy for Science, Technology and Innovation by:</p> <ul style="list-style-type: none"> – Revising the primary school curriculum and introducing science to all primary schools (since 2003) to help children develop scientific skills. In concrete terms, 89% of students sat Science in the Junior Certificate examination in 2011 (25% at ordinary level and 75% at Higher level). At senior cycle, 56% sat Biology. OECD ‘Education at a ‘Glance 2011’ shows that science graduate rates are higher on average in Ireland than in other countries; – Revising the syllabus in Junior Certificate Science (since 2003). The revised syllabus was supported by a comprehensive programme of professional development for teachers, and investment of some EUR 16 million in 2004 in resources and laboratory facilities; – Promoting the Discover Science and Engineering (DSE)¹ national science awareness programme to primary and secondary level, which in the longer term will feed into the third level, (i.e. universities and Institutes of Technology) and the PhD level. The programme promotes an awareness and understanding of the importance of science and engineering in a modern knowledge-based economy and develops effective ways of engaging students, teachers and the public in science, technology and innovation; – Funding the STEPS Engineers Ireland Programme (2005), with the help of dedicated volunteers, to encourage primary and post-primary students to explore the world of science and engineering through various initiatives, including an extensive Champions Programme, Engineers Week, student seminars, scholarships, summer camps, videos and career profiles, mathematics tutorials, and a Maths and Music show. <p>Up to now, all Irish universities have developed school liaison programmes and open days to increase young people’s interest in science, technology, engineering and mathematics (STEM) subjects. In addition, the Deans of Science have established a network promoting science (www.universityscience.ie), including science demonstrations at the Young Scientist Festival, school debating and other competitions, the Science Raps Challenge and Science Speak competitions. Moreover, a decision was taken by HEIs in 2010 to apply an additional award for attainment in mathematics in entrance criteria for higher education to encourage more students to take maths at a higher level in secondary education.</p>	

Table 2: Raising the attractiveness of PhD studies by granting employee status – Norway

Title of the measure	Raising the attractiveness of PhD studies by granting employee status
Category	Increasing the stock of researchers in Europe
Country	Norway
<p>In Norway, the most common form of funding for PhD candidates is through employment in an ordinary fixed term position. Ordinary employment contracts account for approximately 93-95% of doctoral candidates in Norway. Some of them take their PhD while working in a research institute, hospital or university college in a permanent position.</p> <p>The Norwegian government does not provide a researcher’s ‘statute’. However, legislation gives researchers employee status and they enjoy the same rights as employees, including social security, pension rights, maternity and paternity leave, full kindergarten coverage etc. Social security and pension rights are regulated by law. Salaries and career prospects as well as additional social security rights are set out in collective</p>	

¹ An independent evaluation of DSE in 2009 by an International Panel noted that DSE represents very good value for money and plays an important role in encouraging young people to study science and technology. Following specific recommendations, Maths has been included in the scope of DSE and it has been refocused on second level education, as a support for Project Maths.

Title of the measure	Raising the attractiveness of PhD studies by granting employee status
Category	Increasing the stock of researchers in Europe
Country	Norway

agreements.

The Norwegian educational system attracts research students from all over the world (an average of 30%). This can be attributed to the fact that research infrastructure in the country is well advanced, national Centres of Excellence (SFF), Centres of Research-based Innovation (SFI), the Nordic virtual network centres (NCoE), thematic research networks (CEER) are established and recruit research personnel and industry-academia collaboration schemes are very functional.

Table 3: Tax reductions – Belgium

Title of the measure	Tax reductions – Belgium
Category	Increasing the stock of researchers in Europe
Country	Belgium

Since 2003, the cost of researchers' salaries has been reduced for the employer via a subsidy (in fact, a diminution of the employer's social charges). This applies to all universities, colleges and research centres, public and private non-profit institutions and companies (including research personnel in Young Innovative Companies). The reduction amounts to approximately 24% of the gross wage².

The subsidy has applied since 1 October 2003 and was initially applicable to universities, colleges and research funds. It was subsequently extended to public and private non-profit institutions and companies. On 1 January 2009, the percentage of exemption was increased to 75%.

The objective of this measure is to stimulate the employment of researchers both in academia and industry.

In 2009, the subsidy helped make available EUR 480 million of additional investment in R&D, for example in infrastructure or human resources.

In addition, royalties on patents are taxed at a reduced rate while a 'one-shot' innovation premium, not subject to income tax, applies for employees who have an idea that can be commercialised as a successful innovation process or product.

Table 4: Law on Science, Technology and Innovation of 2011 - Spain

Title of the measure	Law on Science, Technology and Innovation of 2011
Category	Increasing the stock of researchers in Europe
Country	Spain

The Spanish government adopted the law on Science, Technology and Innovation on June 1st, 2011 (*Ley 14/2011, de 1 de junio, de la Ciencia, la Tecnología y la Innovación*). 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 system. The new law creates a clear researchers' career scheme 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. The law envisages replacing all grants with four-year employment contracts by 2014.

In addition, the law 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.

The law also contains provisions to foster partnerships between academia and industry and regulates mobility patterns between public entities and the private sector. It establishes two financing agencies:

² Information is available at http://www.belspo.be/belspo/fisc/rech/univ_fr.stm, (in French and Dutch).

Title of the measure	Law on Science, Technology and Innovation of 2011
Category	Increasing the stock of researchers in Europe
Country	Spain
<ul style="list-style-type: none"> – The State Agency for Research (<i>Agencia Estatal de Investigación</i>): to promote new knowledge in scientific and technological research; – The Centre for Industrial Technology Development (<i>Centro para el Desarrollo Tecnológico Industrial</i>): to promote innovation and experimental developments. <p>Finally, under the same law, the different national and regional policies will be better coordinated. The law accords the Autonomous Communities the right to:</p> <ul style="list-style-type: none"> – 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. 	

2. Women in the research profession

Table 5: Girls of the Future - in the footsteps of Maria Skłodowska-Curie - Poland

Title of the measure	Girls of the Future - in the footsteps of Maria Skłodowska-Curie
Category	Women in the research profession
Country	Poland
<p>Girls of the Future - in the footsteps of Maria Skłodowska-Curie award – is an initiative of the Ministry of Science and Higher Education and Elle magazine.</p> <p>The competition aims to support talented young female researchers and promote their scientific achievements. It is open to female students of science, natural sciences, technology or medicine, involved in innovative and professional research, working in international research teams and publishing their findings in international journals.</p> <p>In the 2011 edition of competition, almost 100 students in maths, science, natural sciences and technology from all over Poland submitted their papers. The winner was Joanna Filipowska, a fifth year biology student at the Jagiellonian University who received PLN 20 000 (some EUR 4 700) as well as the opportunity to participate in the European scientific conference of her choice. The researcher is the author of "Mechanisms of bone tissue formation by human myeloid progenitor cells cultured in new generation bioactive glass and glass-ceramics". The results of this research work may find applications in medicine, for example in developing new-generation implants.</p>	

Table 6: The Athena SWAN Charter for Women in Science – United Kingdom

Title of the measure	The Athena SWAN Charter for Women in Science
Category	Women in the research profession
Country	United Kingdom
<p>The Athena SWAN Charter is a scheme which recognises excellence in Science, Technology, Engineering, Maths and Medicine (STEMM) employment in higher education. The Athena SWAN Charter³ was founded in 2005 and is co-owned by the Equality Challenge Unit (ECU) and the UK Resource Centre for women in science, engineering and technology (UKRC). It recognises good employment practice for recruiting, retaining and promoting women academics and researchers in science, engineering and technology (SET) in higher education and research, and it also improves the representation of women academics and researchers in SET. Any university or research institution which is committed to the advancement and promotion of the careers of women in STEMM in higher education and research can apply for membership.</p> <p>The Athena SWAN Charter operates through an awards scheme. Within three years of joining the Charter, universities are expected to apply for a Bronze university award. Universities must achieve a Bronze award before individual departments can apply for recognition in their own right. Only then, can university departments apply for Bronze, Silver or Gold department awards, depending on how far advanced they are in identifying gender problem areas and implementing initiatives to address them. Once a number and range of SET departments hold awards, the university is then able to submit for a Silver university award. Award winners can use the appropriate Bronze, Silver or Gold logo in their recruitment and publicity materials. Athena SWAN Charter awards are only valid for a period of three years, after which institutions and departments must submit a renewal award application, or submit for the next level award. Benchmarking data is required as part of both new and renewal award submissions, covering a period of three years at least, with five years required for Silver renewal and Gold awards. It is therefore possible to collate and review this data</p>	

³ The beliefs underpinning the Charter are:

- The advancement of science, engineering and technology (SET) is fundamental to quality of life across the globe;
- It is vitally important that women are adequately represented in what has traditionally been, and is still, a male-dominated area;
- Science cannot reach its full potential unless it can benefit from the talents of the whole population, and until women and men can benefit equally from the opportunities it affords.

Title of the measure	The Athena SWAN Charter for Women in Science
Category	Women in the research profession
Country	United Kingdom

over time to identify trends in female representation. These can be used to measure how well institutions and departments are meeting the Athena SWAN aims and objectives.

In 2005, there were 10 founder members of the Charter. By 2007, membership had increased to 28 institutions. Forty-four institutions had signed up to the Charter by 2009. Currently (2011), 65 higher education institutions are members of the Charter, representing approximately 48% of all eligible institutions (134) in the UK.

The first Athena SWAN Charter awards were presented in 2006 to universities in recognition of their excellent practice and commitment to the career progression of female academics and researchers in their SET departments. By 2011, there were 87 award-holding institutions and departments, with one Gold department award held by the Department of Chemistry at the University of York.

As part of the Charter, a research study has recently been conducted looking at the impact Athena SWAN awards have had within institutions and departments since the first awards were given in 2006. This research consisted of a series of interviews and focus groups with vice chancellors, pro-vice-chancellors, heads of faculty/school/department, academics and researchers, and equality and diversity practitioners at five Athena SWAN award-holding institutions in the UK. The research identified impact in terms of organisational structure and culture change, with increases in the proportion of women, better representation of women on committees, improvements in the transition from postdoctoral researcher to first academic post, improved working practices to support career progression, and growth in women's networking across institutions. In addition to this, many reported that the good practice they are implementing generally benefits all staff and contributes to improving the working environment and culture within their institutions.

The Athena SWAN Charter has also been mentioned by institutions as part of their RAE submissions⁴, for work on the Concordat⁵ and other HR/organisation recognition schemes. Many institutions and departments have also expressed their intention to include their SWAN awards in the forthcoming UK's Research Excellence Framework (REF) 2014. Many institutions taking part in Athena SWAN have extended the methodology to non-SET disciplines, and this is something that ECU⁶ is also looking into.

One recent development has been the announcement made by the Chief Medical Officer, Professor Dame Sally Davies, which directly links research funding to achieving Athena SWAN Silver award status. Other research funders followed suit. International institutions (USA, Canada, Australia, and across Europe) have shown considerable interest in being included in Athena SWAN or in developing something similar.

⁴ RAE is Research Assessment Exercise conducted jointly by the Higher Education Funding Council for England (HEFCE), the Scottish Funding Council (SFC), the Higher Education Funding Council for Wales (HEFCW) and the Department for Employment and Learning, Northern Ireland (DEL). The primary purpose of the RAE is to produce quality profiles for each submission of research activity made by institutions.

⁵ The Concordat to Support the Career Development of Researchers is an agreement between the employers (universities) and research funders (Research Councils, Funding Councils, major charities etc) about the good management and working conditions of research staff in UK higher education.

⁶ Equality Challenge Unit (ECU) works to further and support equality and diversity for staff and students in higher education across all four nations of the UK, and in further education in Scotland.

Table 7: FEMtech – Women in Research and Technology - Austria

Title of the measure	FEMtech – Women in Research and Technology
Category	Women in the research profession
Country	Austria
<p>The Austrian government in the framework of the ‘Talents Initiative’ (2011) supports RTD talent (particularly women) by offering traineeships for pupils and providing financial support for (regional) education projects in schools in the field of mathematics, informatics, science and technology.</p> <p>The Talents Initiative supports RTD talent (particularly women) by offering traineeships for pupils and providing financial support for (regional) education projects in schools in the field of mathematics, informatics, science and technology. The initiative finances traineeships for female students (<i>FEMtech Traineeships Initiative</i>), offers career support (<i>FEMtech Career Initiative</i>) and supports research projects (<i>FEMtech Research Projects Initiative</i>). In 2011, 1 500 traineeships were funded under the action line “discover talents”. The budget is EUR 1.5 million.</p>	

Table 8: The Milada Paulová Award - Czech Republic

Title of the measure	The Milada Paulová Award
Category	Women in the research profession
Country	Czech Republic
<p>The Ministry of Education, Youth and Sports in collaboration with the National Contact Centre - Women in Science at the Institute of Sociology and the Czech Academy of Sciences - organise the Milada Paulová Award for Life-long Scientific Achievement by a Female Scientist.</p> <p>The award aims to:</p> <ul style="list-style-type: none"> – highlight the excellent scientific achievements of Czech women researchers (bearing in mind the name of the first woman to win the right to lecture at a university (1925) and who also became the first female Professor (1939) in the Czech Republic, historian Milada Paulová); – show general support for women in science; – inspire junior women researchers or students who are considering a career in science. <p>Each year the award is dedicated to a different field of science.</p>	

Table 9: Gender-balanced recruitment at IFREMER - France

Title of the measure	Gender-balanced recruitment at IFREMER
Category	Women in the research profession
Country	France
<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. The three-year agreements signed between the 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, salary) as well as work-life balance.</p> <p>The first agreement ran until 2011 and has been renewed until 2014. Its goals have been to:</p> <ul style="list-style-type: none"> – ensure gender balance in recruitment, promotion, and committees; – encourage trade unions to achieve gender balance; – ensure that no gender factor will be taken into account in career development; and – establish a monitoring committee to oversee implementation of the agreement. <p>IFREMER supports the percentage of women promoted every year being 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.</p>	

Title of the measure	Gender-balanced recruitment at IFREMER
Category	Women in the research profession
Country	France
<p>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). <p>As a result, the recruitment rate of women is now approximately of 50 % per year and is increasing for women scientists.</p>	

Table 10: National Committee on Women in Science - Slovenia

Title of the measure	National Committee on Women in Science
Category	Women in the research profession
Country	Slovenia
<p>The Slovenian Ministry of Higher Education, Science and Technology in 2001 established the National Committee on Women in Science. The National Committee has an Annual Work Plan and reports annually to the Ministry. It is an advisory/expert body. It has 15 members from different institutions and scientific disciplines and its main focus is collecting data and raising awareness, networking of researchers from different scientific disciplines dealing with gender issues, and cooperation with other relevant organisations in Slovenia and the Helsinki Group.</p> <p>The activities of the Committee are numerous and take place at different levels. The major responsibility is the organisation of the annual conference on the role of women in science; it also implements activities in the field of the working conditions and employment by carrying out studies and analysing statistical data, Finally, the Committee carries out multilateral projects with other countries.</p>	

Table 11: Parent-bridge programme – Foundation for Polish Science - Poland

Title of the measure	Parent-bridge programme – Foundation for Polish Science
Category	Women in the research profession
Country	Poland
<p>The Parent-bridge programme aims to enable the best researchers who are raising young children to return to advanced research work as well as to enable pregnant women to carry out research projects, which are financed from external sources. The programme is co-financed from EU structural funds under Action 1.2 'Strengthening the human resources potential of science' of the Innovative Economy Operational Programme 2007–2013.</p> <p>The Parent-bridge programme provides beneficiaries working in fields of bio/tech/info research with two types of support:</p> <ol style="list-style-type: none"> 1. Return Grant for projects to be carried out by researchers of either sex raising young children. The return grant targets researchers who hold at least a PhD and work in a Polish research unit or are employed there at least during the duration of the project. Potential candidates are women with a child up to the age of 4 (or the age of 7 in case of adoption or multiple birth) and men who have taken paternal leave or interrupted their work for a period of at least 6 months, on condition that they return to research work after the leave (or interruption) prior to but no earlier than 12 months before the application deadline. The grant includes: a) a research grant (e.g. the salary of the project director, research costs, research materials and international costs) and b) stipends for up to three researchers (higher education students or PhD students selected via competition) supervised by the project director. Their monthly stipends are of PLN 1 000 (some EUR 230) or PLN 3 000 (some EUR 	

Title of the measure	Parent-bridge programme – Foundation for Polish Science
Category	Women in the research profession
Country	Poland
<p>700) respectively. The project to be carried out may last from 1 to 3 years and it may be carried out on a part-time basis;</p> <p>2. Support for Women conducting research projects during pregnancy, where the nature of the work could affect their pregnancy. The support for pregnant women covers primarily the costs of hiring (or delegating) a researcher to take her place for conducting necessary research tasks which she is unable to perform herself during pregnancy. This form of support is addressed to women who hold at least a master's degree, take part in research projects financed from external sources (e.g. other researchers' projects, their own research projects) and work in health-sensitive conditions (e.g. contact with radiation or chemicals, use of dangerous equipment, frequent travelling).</p>	

Table 12: Paid maternity leave for post-docs - Italy

Title of the measure	Paid maternity leave for post-docs
Category	Women in the research profession
Country	Italy
<p>The Italian Government has established a National Fund⁷ (EUR 3.5 million for 2011) for maintaining post-doc stipends during maternity leave (the months of maternity leave are not computed in the duration of the contract, so they are 'added' at the end).</p> <p>The measure aims to encourage women to undertake a research profession and not to be discriminated against relative to their male counterparts.</p>	

⁷ The decree has just been approved (November 3, 2011).

3. Open, transparent and merit-based recruitment

Table 13: EURAXESS Austria - Austria

Title of the measure	EURAXESS Austria
Category	Open, transparent and merit-based recruitment
Country	Austria
<p>Following an amendment to the University Act, the Austrian Universities must advertise research job vacancies for both scientific and research staff internationally or at least EU-wide.</p> <p>The Austrian Ministry of Science and Research actively promotes the EURAXESS Jobs portal via brochures, flyers, and newspaper advertisements in order to raise awareness of the European job database among universities and public research organisations. The Austrian EURAXESS Service Network – consisting of two Services Centres and a number of Local Contact Points – provides information in the following subject areas: research funding, research job opportunities, legal issues (visa, work permits, entry and residence conditions, social security, tax issues), administrative and cultural issues (housing, language courses, child-care, etc.), the Austrian research landscape (wide scope of research institutions and activities across Austria), women in science (promotion of women, strategic information, activities, databases), potential research partners, access to other countries' EURAXESS portals, and contact details of EURAXESS Services Centres.</p> <p>As a result, job publications from Austria on the EURAXESS Jobs portal have doubled from 200 postings in 2009 to more than 500 postings in 2010. In addition, almost every Austrian university is registered on the EURAXESS Jobs portal.</p>	

Table 14: EURAXESS Ireland - Ireland

Title of the measure	EURAXESS Ireland
Category	Open, transparent and merit-based recruitment
Country	Ireland
<p>All publicly funded jobs are published on the EURAXESS Ireland portal. EURAXESS Ireland provides a range of information services for researchers wishing to enter the country or to go abroad. Information on entry conditions, transfer of social security and pension contributions, accommodation and administrative assistance is available at EURAXESS Ireland.</p> <p>For researchers in Ireland, EURAXESS.ie is the primary source of information. The office deals directly with researchers who cannot solve all their problems using web-based information. By the end of 2010, there were a total of 4 946 registered users on the portal who received regular updates on job and funding opportunities. A large portion of this statistic was shared between Post Doc and Post Graduate Researchers. A total of 133 092 visits to the portal was recorded in the same year. In 2011, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 48 in Ireland compared with 13.1% among the Innovation Union reference group⁸ and an EU average of 24⁹.</p> <p>The Irish EURAXESS website is often cited by the European Commission as an example of best practice and representatives of the Irish Universities Association (IUA) who operate the website have on a number of occasions been invited to make presentations to EU seminars on the successful operation of EURAXESS.ie.</p> <p>In addition, although Ireland is a non-Schengen Country, Ireland opted in to the Third Country Directive (Council Directive 2005/71/EC). It has put in place a scheme (Hosting Agreement) to fast-track non-EU researchers and their families to enter Ireland. This is implemented through the EURAXESS Ireland Office.</p>	

⁸ Based on their average innovation performance across 24 indicators, Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, Netherlands, Slovenia and the UK show a performance close to that of the EU-27. These countries are the Innovation followers.

⁹ Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, Science Metrix/Scopus (Elsevier), Innovation Union Scoreboard 2010.

Table 15: EURAXESS Estonia - Estonia

Title of the measure	EURAXESS Estonia
Category	Open, transparent and merit-based recruitment
Country	Estonia
<p>In Estonia, most publicly funded research jobs are published online. Depending on the institution, either all or a selection of the vacancies is also advertised in English on the institution’s website. The EURAXESS Jobs portal is increasingly used in cases where universities are specifically looking for someone from abroad to fill the position.</p> <p>There has been a positive trend in the number of jobs published on the EURAXESS Jobs portal. In 2010, the number of jobs published by Estonian organisations was 20. In the first nine months of 2011, the number of jobs published on EURAXESS Jobs had grown to 46, an increase of 130%.</p>	

Table 16: Reform of the F.N.R.S. (Fonds National de la Recherche Scientifique) recruiting system - Belgium

Title of the measure	Reform of the F.N.R.S. (<i>Fonds National de la Recherche Scientifique</i>) recruiting system
Category	Open, transparent and merit-based recruitment
Country	Belgium
<p>The ongoing reform of the national recruiting system (FNRS - <i>Fonds National de la Recherche Scientifique</i>) aims to improve transparency in the selection of candidates.</p> <p>Amongst others, the reform :</p> <ul style="list-style-type: none"> – Eliminates the age criterion formerly applied to applicants for FRS-FNRS mandates; – Provides evaluation criteria defined and known to the candidates; – Increases the justification for decisions: a consolidated evaluation report of requests validated by the Scientific Commission, signed by the Chairman of the Scientific Commission, and, after decisions by the Board of Directors of the FRS-FNRS, is communicated to the candidate and to his/her promoter; – Develops a procedure that calls more on experts external to the French-speaking Community. This procedure takes place in two stages, with evaluation of the projects by several individual experts, a majority from outside of the Wallonia-Brussels Federation, and classification in a useful order of all the projects by a Scientific Commission of 15 Members (9 international members - including the Chairman - and 6 Wallonia-Brussels Federation members who are not promoters of the call under way); – Better advertises the calls for candidates and the mechanisms for obtaining mandates in FRS-FNRS/Associated Funds on different internet sites (FRS-FNRS, EURAXESS, etc.); and – Provides a redeveloped internet site containing information of better quality on the procedures of the FRS-FNRS (mechanisms, calls, results, etc.). 	

4. Education and training

Table 17: The České Hlavičky Contest - Czech Republic

Title of the measure	The České Hlavičky Contest
Category	Education and training
Country	Czech Republic
<p>The České Hlavičky Contest aims to inspire, encourage and support talented young people to pursue a career in science, and, mainly in the fields of engineering and natural sciences. It targets children in their final years of primary school as well as high-school students. It is organised by the Česká Hlava Project, the Prague University of Economics, the Ministry of Education, Youth, and Sports, the Association for Youth, Science, and Engineering (AMAVET), and the Association for Supporting Talented Czech Youth, as well as by other partners, and provides awards and financial tools to attract and inspire people to become researchers.</p> <p>In the context of the annual nationwide contest, prizes are awarded to the participants in five categories. The winners are selected by a jury composed of representatives of associations, universities, and scientific institutions. Each winner receives a financial prize, a diploma, and an original “České Hlavičky” award. The winners are also present at a press conference and a gala soirée.</p>	

Table 18: Support Programme for Young Researchers - Belgium

Title of the measure	Support Programme for Young Researchers
Category	Education and training
Country	Belgium
<p>In 2011, the Flemish Community introduced the Support Programme for Young Researchers with a yearly budget of EUR 4 million. The Programme targets young researchers, providing them with training, career development incentives and support for participation in international events and job fairs. The Programme aims to train young researchers (in doctoral schools), guide them throughout their career and reinforce their international orientation.</p> <p>The objectives of the programme are to:</p> <ul style="list-style-type: none"> – train young researchers (in doctoral schools); – develop careers and open up career prospects; – reinforce the international orientation of researchers’ careers; – cooperate within Flanders. <p>The programme has recently started, so there are no tangible results as yet.</p>	

Table 19: Livrets page à page - France

Title of the measure	Livrets page à page
Category	Education and training
Country	France
<p>Two booklets (<i>‘La lumière’</i> and <i>‘La chimie’</i>) have been published by the <i>Commissariat à l’énergie atomique</i> (CEA) to provide school students and teachers with a teaching tool for one academic year. These two booklets contribute to the promotion of scientific culture in schools. Each individual teacher may choose the number of pages to teach (20 pages are available). Each page of the booklet stands alone and provides a complete learning experience. At the end of the year, each student creates their own workbook. All material can be downloaded for free from the CEA website in a colourful format (A4), suitable for printing. This teaching aid requires little supporting material.</p> <p>A wide variety of topics is presented including the fundamentals of physics applications (such as earthquakes, climate, new energy technologies, nanotechnology, lasers, digital simulation, etc.) Some topics are also linked</p>	

Title of the measure	<i>Livrets page à page</i>
Category	Education and training
Country	France

to quizzes, allowing primary and secondary school children to become familiar with science more readily. They are all for free.

The CEA has also partnered publishers to produce a scientific syllabus for educational purposes for all ages and scientific profiles (e.g. *Les Mini pommes, Play-bac, les Petites pommes, éditions du Pommier*, etc). There is a special partnership with the Belin publishing house for books on specific scientific disciplines. Posters on how to "Explain all" are also available free of charge on subjects ranging from the table of elements to how a solar panel works. They are produced in partnership with Casden, an arm of the *Banque populaire*, which specialises in serving the education community.

In addition, booklets have been developed by scientists working at the CEA (astrophysicists, chemists) together with late primary and early secondary school children, and a graphic designer. A collection of 19 educational booklets is available in printed version or online to the general public and students.

Table 20: Programmes for Young Researchers - Slovenia

Title of the measure	Programmes for Young Researchers
Category	Education and training
Country	Slovenia

The Young Researcher Programme, funded by the Slovenian Research Agency, aims to increase the number of students pursuing PhD studies, and incorporates specific measures to promote research in science, technology, engineering and mathematics (STEM) subjects.

Young researchers participate in basic or applied research projects during their postgraduate studies. They also sign regular, fixed-term employment contracts. The Agency finances their salaries, social contributions, and the material and non-material costs for research and postgraduate study. The Agency has since 2006 (each year) provided financing for more than 1 200 young researchers. Funds for the training of young researchers are allocated for a fixed term of up to a maximum of three years and six months for a PhD programme.

The average annual cost of financing one young researcher is approximately EUR 30 000. A postgraduate student who wishes to become a young researcher has to apply for employment with a mentor at a Slovenian research organisation who has been successful in the Call for mentors for young researchers.

The programme is a long-lasting tradition in Slovenia with very good results in terms of increasing the number of researchers in the country. The measure was first introduced in 1986 and since then, there have been two milestones in its implementation; in 1994 and in 2008 when the results were analysed and changes were consequently introduced into the programme.

Table 21: Bringing cutting-edge science into the classroom - United Kingdom

Title of the measure	Bringing cutting-edge science into the classroom
Category	Education and training
Country	United Kingdom
<p>Research Councils UK (RCUK), in order to deliver their strategy to inspire young people to pursue research careers, employ a number of mechanisms, including influencing educational policy to increase the role of contemporary research in the school curriculum and facilitating direct contact between researchers and young people.</p> <p>The RCUK Teacher Continuing Professional Engagement (CPD) programme entitled 'Bringing cutting-edge science into the classroom' is delivered by the Science Learning Centres. It brings together secondary school teachers and researchers to deliver some of the more challenging aspects of the curriculum in a way that captures and retains the interest of their pupils. It is also designed to support teachers' development of specialist knowledge and to facilitate links between teachers and contemporary research.</p> <p>The evaluation of the courses has been excellent. However, in England the Government's 'rarely cover' policy issued to schools has made recruiting the target number of teachers challenging. Feedback has been that, where schools have a number of conflicting priorities, contemporary science courses are viewed as a luxury, where they are limited to the amount of CPD they can take part in outside of school. In response to this, RCUK has offered twilight and weekend courses, but 'rarely cover' remains an issue. This has not been an issue in Scotland, which does not have this policy.</p>	

Table 22: Generation Innovation Initiative - Austria

Title of the measure	Generation Innovation Initiative
Category	Education and training
Country	Austria
<p>One of the three initiatives under the 'Generation Innovation Initiative' is the 'Generation Innovation Praktika' initiative. The initiative supports qualified research traineeships for pupils in research institutes as well as private companies with a target of 1 000 traineeships per annum and an overall budget of EUR 1 million. The measures have the dual aim of:</p> <ul style="list-style-type: none"> – fostering traineeships in the field of natural sciences and technology for pupils (between 16 -18 years old); – raising the number of skilled workers and highly skilled researchers in Austria; <p>An ex-post evaluation of the programme is planned for 2013.</p>	

Table 23: International partnerships with US Universities - Portugal

Title of the measure	International partnerships with US Universities
Category	Education and training
Country	Portugal
<p>The strategic programme of international partnerships in science, technology and higher education was initiated in 2006. The first doctoral and advanced studies programmes were officially launched in September 2007. They bring together several Portuguese universities and leading universities worldwide, including MIT, Carnegie Mellon University and the University of Texas in Austin. The objective of the project is to strengthen the internationalisation of higher education and S&T as a way to stimulate the integration of national institutions in emerging scientific networks at international level.</p> <p>The following programmes are still ongoing:</p> <ul style="list-style-type: none"> – The MIT-Portugal Programme in the field of ‘engineering systems’: the programme attributes special emphasis to the complex processes associated with industrial production, sustainable energy, bio-engineering and transport systems. Overall, the programme involved over 340 master and doctorate students at the beginning of its third year in September 2009. Through the joint programme with MIT, co-operation with the Sloan School of Management was strengthened through an international MBA programme, ‘Lisbon MBA’. This involves co-funding from seven major Portuguese companies and banks in a way that will stimulate new research and the quality of education in management sciences in Portugal; – The Carnegie Mellon Portugal Programme: the programme focuses on information and communication technologies, in particular the so called ‘Future Internet’ technologies and services, involving dual professional masters and PhD programmes by Portuguese institutions and the Carnegie Mellon University. Overall, the programme involved about 170 master and doctorate students at the start of its third year in September 2009; – The Carnegie Mellon Portugal programme: the programme has launched three new innovation networks, whose goal is to consolidate and expand the successful cooperation among all partner institutions and industrial affiliates: 1) Security and Critical Infrastructure Protection (NET-SCIP); 2) Future Internet Services and Technologies (NET- FIT); and 3) Services and Technologies for Interactive Media (NET-STIM); – Under the University of Texas in Austin-Portugal ‘Collaboratory for Emerging Technologies, CoLab’ (March 2007), the programme focuses on collaborative research in advanced interactive digital media and integrating advanced computing and applied mathematics. Overall, the programme involved about 70 doctorate students at the start of its third year in September 2009; – The Harvard Medical School-Portugal Programme on translational research and information (May 2009): the programme establishes a new collaborative framework to foster translational and clinical research programmes, and the development of a new infrastructure for delivering medical information. <p>Unprecedented in Portugal, these programmes have facilitated the creation of effective thematic networks (since 2007) involving a large number of Portuguese institutions with the objective of stimulating their internationalisation through advanced studies projects and sustainable schemes to stimulate new knowledge and exploit new ideas in collaboration with companies and internationally renowned institutions.</p>	

Table 24: Strategic Educational Pathways Scholarships Scheme - Malta

Title of the measure	Strategic Educational Pathways Scholarships Scheme
Category	Education and training
Country	Malta
<p>The Strategic Educational Pathways Scholarships Scheme (STEPS) provides scholarships to individuals wishing to pursue postgraduate studies, either in Malta or overseas. It is funded through the EU Structural Funds (the European Regional Development Fund) for the financial period 2007-13 with a budget of EUR 10 million.</p> <p>By the end of 2010, STEPS had funded 554 scholarships (18% of which were PhD scholarships).</p> <p>As a result, the number of Master and Doctoral graduates has increased and contributes to raising Malta’s low number of tertiary level graduates and doctoral students as well as supporting mobility. The relatively large</p>	

Title of the measure	Strategic Educational Pathways Scholarships Scheme
Category	Education and training
Country	Malta
number of scholarships is already in itself an indication of a successful take-up of this measure.	

Table 25: Measures to improve researchers' skills and competencies - Ireland

Title of the measure	Measures to improve researchers' skills and competencies
Category	Education and training
Country	Ireland
<p>In Ireland, higher education is referred to as third level education. To help coordinate the changes in Irish doctoral education, the seven Irish Universities¹⁰ together with the Higher Education Authority (HEA), have formed a 'Fourth Level Ireland' Network, to mediate and help direct the changes in doctoral education. Consequently, graduate education is increasingly referred to as the 'Fourth Level Ireland' (University Graduate Education)¹¹. Under this framework, the seven universities work together under the banner of the Fourth Level to provide graduate education opportunities in all disciplines, both taught and research degree programmes. Students have the opportunity to gain experience in relevant employment areas and there are often placements in companies for training or research.</p> <p>To achieve the objective of developing PhD graduates with the skills necessary to develop and manage their careers across a broad range of employment sectors, including academia, universities are providing more structured support for students, incorporating research and generic skills development opportunities.</p> <p>Fourth Level Ireland's skills training aims to:</p> <ul style="list-style-type: none"> – communicate to students, supervisors and employers the skills and attributes of a PhD graduate; – aid students, graduate schools, graduate programmes and other advisory committees in establishing students' skills development needs; – inform the development of further skills development opportunities for all PhD students. <p>The skills identified by the Irish Universities Association's Fourth Level Network of Deans of Graduate Studies as relevant to PhD student education are: personal effectiveness/development, team-working and leadership career management, and entrepreneurship and innovation.</p> <p>Finally, Fourth Level Ireland equips researchers with the necessary skills to make the transition from academia to the industry sector.</p>	

Table 26: Internships at IUFM de Creteil - France

Title of the measure	Internships at IUFM de Creteil
Category	Education and training
Country	France
<p>Between 2004 and 2010, the IUFM (<i>Institut Universitaire de Formation des Maîtres de l'Académie de Créteil</i>) organised courses on 'scientific culture' for future elementary and secondary school teachers regardless of their discipline by. These were based on meetings with researchers, lectures and discussions with scientific philosophers on social issues related to science (e.g. 'technology and humanity', 'The images of science: construction and messages').</p> <p>Up to now, 300 teachers have availed themselves of the teaching resources at their disposal free of charge and the opportunity to visit research centres. Similar continuous training courses for teachers have been launched in the Paris area and are being considered elsewhere.</p>	

¹⁰ Dublin City University, Trinity College Dublin, University College Dublin, University College Cork, University of Limerick, National University of Ireland Galway, National University of Ireland Maynooth.

¹¹ Fourth Level Ireland - University Graduate Education resource website: <http://www.4thlevelireland.ie/>.

Table 27: Doctoral Schools - Estonia

Title of the measure	Doctoral Schools
Category	Education and training
Country	Estonia
<p>Doctoral schools were set up in 2005. In 2009, thirteen new Doctoral schools were selected for the period 2009-15. Their aim is to improve the quality of tutoring of doctoral candidates and to increase the efficiency of doctoral studies in Estonia through interdisciplinary, international and national cooperation. Apart from mobility opportunities, winter and summer schools, and study programmes, doctoral schools propose transferable and social skills training to promote interdisciplinary research and enhance the cooperation between universities and the private sector.</p> <p>From 2010, students who have interrupted their doctoral studies are welcome to continue and finish their studies – i.e. they are given a second chance. Those resuming doctoral studies may participate in doctoral schools. These help them find supervisors and participate in summer schools, conferences and mobility activities provided by doctoral schools. Two partners at least need to be involved: an Estonian university, a R&D institution, the public sector or companies.</p> <p>The doctoral schools are project-based and are funded by the European Social Fund. The total budget is EUR 16.9 million for 2009-2015.</p>	

Table 28: Centres of Excellence - Norway

Title of the measure	Centres of Excellence
Category	Education and training
Country	Norway
<p>The National Centres of Excellence (SFF), Centres of Research-based Innovation (SFI), Nordic virtual network centres (NCoE), and thematic research networks (CEER) provide a favourable environment for research and training of doctoral students. They attract excellent researchers from abroad and stimulate international cooperation as well as academic co-publications between academia and industry.</p> <p>The common objective of all Centres is to promote excellence in certain areas by offering generous funding for a substantial period of time on the basis of competition among applicants.</p> <p>The Centres of Excellences were evaluated with positive results in the ‘Midterm Evaluation of Eight Centres of Excellence (SFF II)’.</p>	

Table 29: National day “Scientifique toi aussi !” - France

Title of the measure	National day “Scientifique toi aussi !”
Category	Education and training
Country	France
<p>Taking into account that a large number of those who take STEM subjects at school do not ultimately follow a scientific career, the CEA decided to raise awareness of researchers’ career range and the various scientific profiles. Around 1 300 pupils and teachers had the opportunity to spend a day at CEA headquarters, meet with researchers (“speed-dating” organised with 170 researchers across France), and visit major research facilities (44 were open for the event). Onisep, the national information office on teaching and the professions, prepared a mapping science and engineering paths in higher education for this purpose, as well as a number of teaching materials.</p> <p>At the CEA, January 26 is now the ‘national day of information about the scientific profession’ for pupils in their last two years of secondary education.</p>	

5. Working conditions

Table 30: Academic Freedom Initiative - Germany

Title of the measure	Academic Freedom Initiative
Category	Working conditions
Country	Germany
<p>The Academic Freedom Initiative (<i>Wissenschaftsinitiative</i>) has resulted since 2006 in the adoption of measures, mostly non-legislative, for defining remuneration conditions for employees at non-university research institutions, whether covered or not by collective agreements. The initiative is designed to ensure that competitive salaries are offered in view of the fierce national and international competition for the best researchers.</p> <p>In 2011, there were discussions on extending the initiative so as to be able to offer internationally attractive conditions on a long-term basis and to keep the necessary staff in the German science system.</p>	

Table 31: Promotion of the 'Charter & Code' principles - Croatia

Title of the measure	Promotion of the 'Charter & Code' principles
Category	Working conditions
Country	Croatia
<p>The implementation of the 'Charter & Code' principles is publicly promoted and supported by the Ministry of Science, Education and Sports. All public research organisations have endorsed the 'Charter & Code' and currently the information is spreading to the private sector. The Ministry, together with the Agency for Mobility and EU Programmes, offers support and information about the implementation process.</p> <p>The objectives of promoting the 'Charter & Code' principles are to:</p> <ul style="list-style-type: none"> – Improve researchers' working conditions in accordance with common European principles (as set in the Charter & Code); – Execute the actions foreseen in the "Action plan for mobility of researchers" and the "Action plan to encourage investment in science and research". <p>All 32 public research organisations (research institutes and universities) in Croatia as well as the Croatian Academy of Sciences and Arts, the Croatian Science Foundation and three research organisations from the private sector have endorsed the 'Charter & Code' and are working on improving their HR strategy for researchers in accordance with those principles. To date, 15 research organisations (40%) have developed an HR strategy in accordance with the 'Charter and Code' and six (17%) have been acknowledged by the European Commission.</p> <p>Furthermore, the Croatian Academy of Sciences and Arts, the Croatian Science Foundation and three research organisations from the private sector have also endorsed the 'Charter & Code'. A strong promotional push (by direct letters and e-mails, newsletters and during info-days for related activities), offering information and support from public (policy) institutions and inclusion of the first organisations to have successfully implemented the 'Charter & Code' into the promotional activities have proven most influential for its success.</p>	

Table 32: Promotion of the 'Charter & Code' principles - Austria

Title of the measure	Promotion of the 'Charter & Code' principles
Category	Working conditions
Country	Austria
<p>Promotion of the 'Charter & Code' and broad implementation of their principles at Austrian universities is part of the negotiations for performance agreements 2010-12 with universities. In Austria, 18 universities have signed the 'Charter & Code'. In addition, four funding organisations, three umbrella organisations, two research organisations and one university of applied sciences have signed the 'Charter & Code'. The Medical University of Graz was the first Austrian university to receive HRS4R (Human Resources Strategy for Researchers) acknowledgement from the European Commission. The implementation of the 'Charter & Code' is part of the National Action Plan for Researchers</p>	

Table 33: Vitae realising the potential of researchers - United Kingdom

Title of the measure	Vitae realising the potential of researchers
Category	Working conditions
Country	United Kingdom
<p>In 2010, Vitae launched the new Researcher Development Framework (RDF). In this Framework, thirty major UK organisations (e.g. Funding Councils, Research Councils, Quality Assurance Agency, the unions and Universities UK) are involved in knowledge exchange and the development of a strategic agenda to train and support high-level researchers to further improve their skills competencies. The Vitae programme provides national leadership and strategic development, and works with higher education institutions, policy makers, stakeholders, employers and individual researchers. In 2010, Vitae launched the new Researcher Development Framework (RDF). This Framework is endorsed by thirty major UK organisations (e.g. Funding Councils, Research Councils, Quality Assurance Agency, the unions and Universities UK) who are involved in knowledge exchange and the development of a strategic agenda to train and support high-level researchers to further improve their skills competencies.</p> <p>The RDF is currently being implemented in higher education institutions. Vitae have produced stakeholder briefings, a personal development planner for researchers and guidance on how to map training exercises, courses and programmes to the Framework. Higher education institutions in the UK can also develop their individual training and development programmes, covering a range of domains included in new the Researcher Development Framework.</p> <p>Vitae also possesses an exhaustive database of 400 best practice training examples and 120 examples of evaluation activities. It also offers several materials and courses on entrepreneurship, knowledge exchange, leadership, public engagement, information literacy and teaching.</p> <p>The key successes of the programme in 2010 were:</p> <ul style="list-style-type: none"> – Vitae worked with all UK institutions to embed enhanced professional and career development for researchers leading to demonstrable improvements in researchers' successes in making grant applications, fellowships and employability; – Vitae enabled colleagues to share practice and develop collaborative programmes in order to gain efficient use of researcher development funding within the higher education sector; – Vitae launched the new Researcher Development Framework to develop world-class researchers, build our research base and ensure that researchers are prepared for future careers, endorsed by over 30 key UK organizations; – Vitae provided high quality learning materials and development programmes to 54 UK higher education institutions; – Vitae provided leading research into the careers of researchers and their contribution to all sectors of the UK economy; – Vitae designed, led and managed a process to enable 23 UK institutions to gain the 'HR Excellence in Research' award from the European Commission; the UK now has the greatest number of awards of any 	

Title of the measure	Vitae realising the potential of researchers
Category	Working conditions
Country	United Kingdom
<p>European country;</p> <ul style="list-style-type: none"> – Vitae continued to provide resources for researchers' personal development and career management to 155 UK organisations; and – Vitae campaigned to broaden the range of employment opportunities open to researchers and provides opportunities for employers to engage in national discussions about how to develop researchers. 	

Table 34: The Concordat to Support the Career Development of Researchers - United Kingdom

Title of the measure	The Concordat to Support the Career Development of Researchers
Category	Working conditions
Country	United Kingdom
<p>The Concordat to Support the Career Development of Researchers (since 2008) constitutes an agreement between the employers (universities) and research funders (Research Councils, funding councils, major charities, etc.) on good management and quality working conditions for research staff. Vitae, the UK organisation championing researchers and research staff, leads in the implementation of the Concordat and assists UK higher institutions exchange knowledge and good practices.</p> <p>The implementation of the Concordat is reviewed annually by the Concordat Strategy Group, and a report is also submitted to the Funders Forum. This Forum brings together governmental and non-governmental funders of public good research to consider the collective impact of their strategies on the sustainability, health and outputs on the Research Base.</p>	

Table 35: The Sapere Aude Programme - Denmark

Title of the measure	The <i>Sapere Aude</i> Programme
Category	Working conditions
Country	Denmark
<p>The Danish Council for Independent Research (DFF) offers a comprehensive career programme for excellent research, the <i>Sapere Aude</i> programme. The Council's initiative provides encouragement for individual and talented researchers to conduct their own research programme independently and to develop international networks. The programme deals with the following career stages: post-doctoral (DFF post-doc), associate professor (DFF Starting Grant) and professor (DFF Advanced Grant). Grants are between EUR 270 000 and EUR 1.3 million and are available both to Danish researchers and researchers from abroad.</p> <p>The objectives of the programme are to:</p> <ul style="list-style-type: none"> – encourage talented researchers to conduct their own research programme and to develop international networks; – strengthen the coming generation of researchers; – lift more female researchers to top levels; – introduce a launching point to the international elite by developing the abilities of the best research talents, nationally and internationally. <p>In 2010, the <i>Sapere Aude</i> Programme provided 69 researchers with the opportunity of exploring and developing their own research projects. 38 young talents received a DFF - Postdoc grant, and 31 leading young researchers each received a DFF Starting Grant. In the latter category, the success rate for female applicants was more or less the same as for male applicants.</p>	

6. Collaboration between academia and industry

Table 36: Cooperation 2011 - Partnerships of Production and Research Institutions in Focused Research and Technology Sectors - Greece

Title of the measure	Cooperation 2011 - Partnerships of Production and Research Institutions in Focused Research and Technology Sectors
Category	Collaboration between academia and industry
Country	Greece
<p>The Cooperation 2011 Programme targets domestic partnerships between productive-commercial businesses of all sizes, research centres, institutes, higher education institutes, technological, public and other bodies for the implementation of R&D projects in specific manufacturing and services sectors. Businesses and research bodies are the key beneficiaries, whereas the rest participate as technology/services/products end-users.</p> <p>The objectives of the Cooperation 2011 Programme are to:</p> <ul style="list-style-type: none"> – enhance collaboration between businesses and research bodies through common implementation of research and technological projects; – foster green development, competitiveness and outward orientation of Greek businesses; – improve Greek citizens' quality of life; – strengthen and upgrade the skills of the research workforce; – establish international cooperation through networking and collaboration with entities from European and other countries. <p>The aid rate (public expenditure) at project level is a maximum of 80 % of the total budget of each project/draft, and the rest of the cost is covered by participants' own contribution (a minimum of 20 % coming from beneficiaries' own resources and mainly from businesses). The projects started running in January 2011, their duration depending on the field, and the timescale is 2-5 years, and the average total budget allocated per project is EUR 800 000. The number of projects approved comes to 157, all involving academia-industry partnerships.</p>	

Table 37: Programme for Young Researchers for Industry - Slovenia

Title of the measure	Programme for Young Researchers for Industry
Category	Collaboration between academia and industry
Country	Slovenia
<p>The Programme provides incentives to enterprises that employed young doctorate holders.</p> <p>The objectives of the programme are to:</p> <ul style="list-style-type: none"> – Establish research units in industrial enterprises with the option of providing training for doctoral candidates; – Introduce a quota for women on research committees; – Encourage training for researchers; and – Fund researchers' mobility. 	

Table 38: Industrial PhD and post-doc Programmes - Denmark

Title of the measure	Industrial PhD and post-doc Programmes
Category	Collaboration between academia and industry
Country	Denmark
<p>The Industrial PhD scheme (since 1971) and the Industrial post-doc scheme of the Danish National Advanced Technology Foundation (since 2011) aim at encouraging researchers to move from the public to the business sector:</p> <ol style="list-style-type: none"> 1. The Industrial PhD Programme aims to offer doctoral training in cooperation with the industry sector. The Industrial PhD Programme is a three-year research project and research training programme with an industrial focus conducted jointly by a private company, an industrial PhD student and a university. Universities and students of all nationalities may be accepted. The student is employed by the company and enrolled at the university. Public organisations and institutions may also apply for approval of an Industrial PhD project in cooperation with a University, as long as the project lives up to the general requirements described in the programme guidelines. <p>The company hires the Industrial PhD for the three-year duration of the project as a full-time employee on ordinary terms for salaried employees. The salary is agreed between the student and the company, but must correspond as a minimum to the pay rate of the collective agreement for PhD students employed by the Danish state. The company receives a subsidy to cover roughly half the student’s salary, and the enrolling university receives a subsidy to cover tuition fees. The Programme includes a compulsory business course so that students understand the commercial aspects of research and innovation projects;</p> <ol style="list-style-type: none"> 2. Industrial post-doc programme: Under this initiative by the Danish National Advanced Technology Foundation, new doctoral graduates carry out research with financial and technical support from both a university and a company. The researcher has to spend some time working in the company and some time in the university. The Danish National Advanced Technology Foundation contributed with DKK 13 million for all 12 research projects, which have a total budget of DKK 25 million. The selected project must focus on creating concrete results. This new scheme stimulates the interaction between universities and the private sector, including all size of companies and from all technology areas. <p>It is expected that the new career opportunity at the university will lead to more national and foreign students applying for a PhD in Denmark.</p>	

Table 39: Doctoral collaboration with Industry - United Kingdom

Title of the measure	Doctoral collaboration with Industry
Category	Collaboration between academia and industry
Country	United Kingdom
<p>The UK Research Councils (RCUK) partnership has developed various mechanisms and approaches to help the HEI sector respond to high-level skills demands and to ensure that industry is actively engaged in the identification, development and delivery of training activities. The partnership aims to achieve the following objectives:</p> <ul style="list-style-type: none"> – Deliver high skilled people; – Drive innovation in knowledge exchange through enhancement of knowledge and skills’ exchange; – Ensure mechanisms are in place to encourage people exchange between the research base and user partners at all career stages. <p>Research Councils’ training advisory boards and committees include members from relevant industrial or user sectors, allowing employers to help shape not only the overall training agenda but also to advise on technological areas and wider employability skills. RCUK postgraduate training mechanisms that enable strong input from business, industry and other user sectors include:</p> <ul style="list-style-type: none"> – CASE (Collaborative Awards in Science and Engineering) and CDAs (Collaborative Doctoral Awards) 	

Title of the measure	Doctoral collaboration with Industry
Category	Collaboration between academia and industry
Country	United Kingdom
<p>encourage collaborative partnerships between research organisations and public or private sector organisations. During a CASE or CDA studentship, the student enhances their skills training and broader learning by spending between 3 and 18 months with the collaborating body in a workplace outside the academic environment;</p> <ul style="list-style-type: none"> – Internships: designed to give students experience of working in a business, public or third sector organisation, e.g. for example, three-month internships funded in UK Government Departments as well as business and third sector organisations in some cases; – Knowledge Transfer Partnerships promote KTPs to postgraduate students. Recently qualified graduate students are employed by a business partner to support knowledge and expertise transfer via a strategic project launched together with the higher education or research institution; – Centres and Capacity Building Clusters: a range of activities aimed to enable institutions to build a critical mass of researchers committed to the co-production of knowledge and its application to business and third sectors. – Centres for Doctoral Training have strong industrial involvement as students spend up to 75% of their time in an industrial environment. This allows employers to help shape not only the overall training agenda for the Centre but also to tailor the training received by each student; – Block Grant Partnerships: blocks of studentships and the Research Organisation are expected to combine their training strategy with their Research and Knowledge Transfer strategies; and – Innovation Vouchers for SMEs: National SMEs have the opportunity to apply for a GBP 3 000 (some EUR 3 700) voucher to purchase academic support by employing researchers in the field of technology and innovation. <p>In 2009, some 23% (over 4 000) of the PhD projects funded involved formal collaboration with a third party. This includes working with business, industry and the public sector.</p>	

Table 40: Fraunhofer Society - Germany

Title of the measure	Fraunhofer Society
Category	Collaboration between academia and industry
Country	Germany
<p>The Fraunhofer Society¹² supports application-based research in cooperation with the private sector. Students are offered the possibility of pursuing a PhD in applied research in close collaboration with industry.</p> <p>The number of PhD degrees supported by the Fraunhofer Society amounted to 941 in 2005 and had doubled by 2010. Since mid-2009, the Fraunhofer Society has been organising PhD camps at different locations in Germany offering PhD students information and support on science-based start-ups and careers for PhDs.</p>	

Table 41: Measures to develop more partnerships between industry and academia - Ireland

Title of the measure	Measures to develop more partnerships between industry and academia
Category	Collaboration between academia and industry
Country	Ireland
<p>The Irish Research Council for Science, Engineering and Technology (IRCSET), one of the major funding agencies in Ireland focusing on STEM disciplines, operates the Enterprise Partnership Scheme through which IRCSET links with industry partners to award co-funded postgraduate scholarships and postdoctoral fellowships to the most promising researchers in Ireland to spend two years at an enterprise/industry host laboratory outside Ireland, followed by a return year at an Irish Higher Education Institution. The Scheme offers researchers the opportunity to develop skills and gain additional beneficial experience and insight into the commercial arena while completing their research. It also provides industry with flexible and easy access to an exceptional pool of competitively selected, high calibre researchers and the opportunity to build links with</p>	

¹² The Fraunhofer Society is composed of 80 institutions, about 18 000 employees with an annual budget of EUR 1.7 billion.

Title of the measure	Measures to develop more partnerships between industry and academia
Category	Collaboration between academia and industry
Country	Ireland
<p>relevant academic research groups.</p> <p>IRCSET also offers funding opportunities for early-career researchers across science, engineering and technology disciplines. All funding competitions are open to all qualified candidates from anywhere in the world. Competitions are based on the merit of the individual applicants rather than allocating awards to specific research disciplines or areas.</p>	

7. Mobility and international attractiveness

Table 42: Scientific Visa package - Ireland

Title of the measure	Scientific Visa package
Category	Mobility and international attractiveness
Country	Ireland
<p>Ireland implements the Hosting Agreement ('Scientific Visa') scheme, which facilitates the inward migration of Third Country researchers to the country. This has most certainly helped in attracting non-EU researchers to both the public and private sectors in support of the creation of a knowledge-based economy.</p> <p>Between the commencement of the scheme in October 2007 and 31st December, 2010, the EURAXESS office processed 1 040 Hosting Agreements, with a total of 28 accredited organisations. This includes the seven Irish universities, eleven Institutes of Technology and six applications from Industry. However, 90% of all approved Hosting Agreements have been issued to researchers employed by the universities.</p> <p>There were approximately 500 researchers working on research projects under the Hosting Agreement scheme in Ireland by the 31st December 2010. The top two non-EEA nationalities with hosting agreements in 2010 were India and China, followed by the US. By the end of 2010, 465 researchers had availed of the immediate family unification opportunity and 218 researchers had their dependants with them for the duration of their research projects in Ireland.</p>	

Table 43: Odysseus Initiatives - Belgium

Title of the measure	Odysseus Initiatives
Category	Mobility and international attractiveness
Country	Belgium
<p>The Odysseus Programme is intended to offer start-up funding to a number of outstanding researchers, international as well as Belgian, who have built up a career outside Flanders, in order to develop a research group within a Flemish university or to set up a research line and become progressively more involved in the Flemish research establishment.</p> <p>The procedure consists of nominations by one or more Flemish universities and a quality control by the FWO, which also monitors the finances. The total budget is EUR 12 million.</p> <p>The Odysseus initiative was evaluated in 2008 with an overall positive result. Interestingly, the financing has not only attracted international top researchers to Flanders, but has also increased the international focus of the rest of research staff, especially among the post-doc population.</p>	

Table 44: Scientific Visa package - Croatia

Title of the measure	Scientific Visa package
Category	Mobility and international attractiveness
Country	Croatia
<p>EURAXESS Croatia has established a productive cooperation with all bodies necessary to remove researchers' obstacles to mobility: the Ministry of Science, Education and Sports; the Ministry of the Interior; the Ministry of Foreign Affairs and European Integration; and the Croatian Institute for Health Insurance. Furthermore, these bodies have also been brought together during meetings of the Committee for Researchers' Mobility.</p> <p>Thanks to this cooperation, it was possible successfully to implement the 'Scientific Visa' package, involving cooperation with these Ministries. In addition, it was possible to identify some mobility obstacles, and to remove them (e.g. in order to be appointed to a scientific position in a public research organisation, a researcher needs to register with the Ministry of Science, Education and Sports – this Registry used to list "Croatian citizenship" as one of the requirements, but this has been removed, opening up the Registry, and thus scientific positions, to researchers from other countries).</p> <p>Another example of this successful cooperation is the fact that the "Foreign Researcher's Guide to Croatia", published by the EURAXESS Centre, is now integrated into all websites of Croatian embassies around the world, alongside a link to the Croatian EURAXESS portal.</p> <p>Finally, the recently published new Aliens Act (Official Gazette 130/11, valid from 1/1/2012) exempts foreign researchers from the work permit obligation – i.e. researchers can work in Croatia without a work permit, even if they do not use the "Scientific Visa" provisions. This is a result of negotiations in the Committee for Researchers' Mobility and demonstrates the authorities' willingness to ease mobility in the research sector.</p> <p>All these measures aim to:</p> <ul style="list-style-type: none"> – Include all decision-makers in the efforts to fully integrate Croatia into the ERA and at a national level remove obstacles to researchers' mobility; and – Establish broad collaboration among diverse policy makers and government bodies. <p>Since February 2009, the Ministry of Science, Education and Sports has issued 54 hosting permits. Croatian research organisations are very satisfied with the procedure. Furthermore, EURAXESS Croatia has assisted the first foreign researcher to be fully employed and elected to a scientific position. In addition, thanks to the recognition of EURAXESS by the authorities, it is able to provide reliable information and sees a continuous increase in questions from foreign researchers and their hosts, becoming a true partner in researchers' mobility. The achievements can be attributed not only to the lobbying efforts by EURAXESS Croatia but also to the authorities' willingness to recognise the importance of researchers' mobility.</p>	

Table 45: Welcome programme – Foundation for Polish Science - Poland

Title of the measure	Welcome programme – Foundation for Polish Science
Category	Mobility and international attractiveness
Country	Poland
<p>The Welcome programme funds projects carried out by outstanding scientists from abroad establishing research teams in Polish scientific institutions. The overall objective of the Welcome Programme is to engage outstanding foreign researchers in doing research in Poland and intensify the degree of international cooperation of Polish institutes and universities.</p> <p>The programme targets:</p> <ul style="list-style-type: none"> – foreign researchers with at least a PhD degree, who either plan to work in Poland, or have already established their research teams there no earlier than five years prior to the cut-off date; – Polish researchers with at least a PhD degree, who have either stayed abroad for at least 2 years and intend to come back to Poland or have already returned to Poland (however not earlier than 2 years prior to the cut-off date). – The projects need to be planned over a period of at least 3 years and they have to be completed by 30 June 2015. <p>In accordance with the programme guidelines, the foreign researcher is both the project leader - and the team leader, whereas the subsequent tasks are performed by other members of the team, namely young researchers: master students, PhD students, young PhDs - selected on a competition basis – and other workers. The number of the young researchers in the team cannot be lower than six. The projects should be in one of three main thematic areas: Bio, Info, and Techno.</p> <p>The foreign researcher is affiliated with the host institution during the project. The host institution is obliged to provide the team leader with a salary. Apart from the remuneration package, the researcher is also entitled to receive a personal stipend, which designed to remove any disproportionate differential in the remuneration level in the foreign institution and the host institution in Poland. The scientist, apart from carrying out research activities, is also expected to devote some of his/her time to teaching. This cannot exceed 60 hours a year.</p> <p>The main evaluation criteria are:</p> <ul style="list-style-type: none"> – Scientific value of the project; – Team leader’s scientific record as well as experience in implementing projects; and – Scientific quality of the five most important publications or patents (achieved within the last four years). 	

Table 46: ENTER - Programme for incorporation of foreign PhD researchers into the Greek RTD system - Greece

Title of the measure	ENTER - Programme for incorporation of foreign PhD researchers into the Greek RTD system
Category	Mobility and international attractiveness
Country	Greece
<p>The Programme for incorporation of foreign PhD researchers into the Greek RTD system, launched in 2001, aimed at enhancing technology and know-how transfer from the international research community to Greek research entities and vice versa and at promoting research institutions' international networking.</p> <p>The programme was different in that:</p> <ul style="list-style-type: none"> – It did not target Greek-speaking researchers alone, but it was open to all foreign researchers wishing to work in Greek laboratories for a period of three to twenty four months, which could be extended up to forty eight months; – Proposals were submitted from Greek Universities or public research centres, but they provided co-funding at a 10% minimum of the total budget of the project from an entity from the productive sector (enterprise or other non-research oriented private or public body in a position to take advantage of the project's results). The participation of such entities in the projects increased the job opportunities for foreign researchers wishing to make a career in Greece; and – The fields covered were telecommunications and information technologies, life sciences, environment, water management and natural hazards, new materials, recycling, renewable energy sources and energy saving, economy, new concepts for regional development and competitiveness, employment and professional training, culture, sports and tourism. <p>Forty-six projects were approved out of 131 applications. The foreign researchers' nationalities were: Greeks from the diaspora (29 applicants), EU Member States (10 applicants), Russia and the Newly Independent States (6 applicants), Balkan countries (3 applicants), Cyprus (1), India (1), and Japan (1). Of the research fields, Life Sciences were the most prevalent (17 approved projects), followed by Telecommunications and Informatics (10 projects) and then Environment (6 projects).</p>	

Table 47: Mobility Programme HUMAN-MB08 - Hungary

Title of the measure	Mobility Programme HUMAN-MB08
Category	Mobility and international attractiveness
Country	Hungary
<p>The Mobility Programme, co-financed by the EU 7th Framework Programme (Marie Curie actions), is designed to promote the scientific careers of experienced researchers with PhD degree or at least four years of full-time research experience. The programme includes support for the mobility and international training of researchers of any nationalities, as well as support for Hungarian researchers returning to Hungary. The call is open to every field of science; the main evaluation aspect is scientific excellence. The long-term contribution of the funded project to the career development of the researcher (the impact of the grant) is also taken seriously into account. (Total budget: EUR 11.1 million.)</p> <p>The aims of the Mobility programme include promoting the scientific careers of researchers with a PhD degree or at least four years of full-time research experience by:</p> <ul style="list-style-type: none"> – Supporting their mobility and acquisition of international experience, – Promoting the exploitation of experience acquired in international, non-European countries by supporting researchers returning to Hungary. <p>Researchers with a PhD degree or at least four years of full-time research experience are eligible to submit a proposal in all thematic priorities: technical sciences, natural sciences, life sciences and social sciences.</p> <p>More than 50 researchers have been funded within the framework of the programme in the past three years.</p>	

Table 48: Combined professorial positions - Norway

Title of the measure	Combined professorial positions
Category	Mobility and international attractiveness
Country	Norway
<p>In Norway, professors and associate professors have the opportunity to hold a part time (20%) position (Professor II/ Associate professor II) in one institution in addition to their full-time permanent position in another institution. Qualified personnel from other sectors may also take up part time positions in the Higher Education Sector. This arrangement facilitates cooperation between the higher education sector and industry.</p> <p>It thus encourages excellent researchers or personnel with other competencies which are in demand to improve capacity and performance in research, tuition and teaching.</p> <p>Such positions may be held by excellent academics from abroad, or research personnel from other sectors.</p>	

Table 49: The Researcher Taxation Scheme - Denmark

Title of the measure	The Researcher Taxation Scheme
Category	Mobility and international attractiveness
Country	Denmark
<p>In a study of expatriates carried out in 2006, a number of companies voiced concern at that high tax rates as discouraging potential employees from working in Denmark, thus reducing their recruitment base. Therefore, a reduced tax scheme was introduced. Researchers and highly paid employees recruited abroad, who are able to meet a number of conditions, and have not been a Danish tax resident in the previous 10 years, can be employed at a special 26% tax rate for 60 months, but are not allowed any deductions if they enjoy this rate.</p> <p>The measure aims to increase Denmark's attractiveness as a country for carrying out research activities.</p> <p>An evaluation has shown that the reduced tax scheme has a positive effect. Seventy percent of expats qualifying for the reduced tax scheme indicated that it was important to them when accepting their job in Denmark, while 14% said it was less important or not important. 62% also stated that the time limit of the scheme (25% for three years or 33% for five years at the time of evaluation) would influence their decision on when to leave Denmark</p>	