Annex IV: "Measures supporting education and training"

Table 1: Measures to attract young people to science and the research profession, to increase the quality of doctoral training and life-long learning (including the development of a Skills' agenda) and to develop partnerships between academia and industry by fostering doctoral training in cooperation with industry

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
AUSTRIA	– Young People initiative was designed to inspire young people to explore technology and innovation with the ultimate aim of attracting students to pursue a technology-related academic career; – Innovation Makes Schools Top-Class Programme – Mentoring Programme supports mentoring (mainly by women researchers) of young (female) pupils (15-19 years) interested in research, technology and innovation; – Mathematics, Informatics, Science and Technology programme - Information Campaign encourages students to pursue a career in a scientific field; – 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; – Sparkling Science Research Agenda: supports (new) methods of promoting young researchers and artists in Europe and fosters cooperation between experienced scientists and young people in more than 160 projects; – Kids Universities Initiative enables children between the age of 7 and 12 to explore science with the support of researchers; – FIT – Women in Technology Initiative offers (female) pupils information on technical studies with the aim of stimulating girls' interest in technology.	– Marietta Blau grant aims at generating internationally competitive PhD diplomas in Austria by offering financial support to highly-qualified doctoral candidates; – Cultivating Talents programme supports the development of human resources in research based on four priorities: 1) doctoral training, 2) career development for young post-docs, 3) specific measures to increase the number of women scientists, and 4) brain-gain measures; – In order to increase the number of doctoral graduates in (STEM), a number of Austrian universities are establishing new organisational structures for doctoral training (and in particular supervision), e.g. doctoral schools or doctoral centres. In addition, some universities are developing new structural doctoral programmes aimed at supplementing and broadening doctoral training; – Under the Universities Performance Agreement, doctoral training was extended to three years as of the 2009-10 winter terms in order to improve the quality of doctoral training. In addition, Universities have started to implement new doctoral curricula and have introduced additional measures to improve quality, skills and supervision of doctoral training; – Doktoratskolleg facilitates work experience abroad opportunities for researchers and offers training in support of transferable skills development; – Initiativkollegs foster researchers' collaboration in research projects and support networking at international and interdisciplinary level; – The Institute of Science and Technology Austria offers an innovative PhD programme combining	– Generation innovation Initiative: a) Generation Innovation Regions – educational institutions, research institutes and private companies team up to implement projects in research, technology and innovation and b) Generation Innovation Praktika – supports qualified research traineeships for pupils in research institutes and private companies with a target of 1 000 traineeships per annum. The budget is EUR 1 million; – COMET programme aims to boost researchers' potential at the interface between science and industry by creating attractive opportunities to develop and use researchers' skills in science and industry; – Christian Doppler Laboratories programme promotes and strengthens application-based research carried out by academia in collaboration with industry partners; – Young Experts programme stimulates (junior) researchers' cross-sector mobility as well as knowledge transfer between research and business by providing funding to junior researchers, post-docs, bachelor-and master's candidates; – Josef Ressel Centres – Research Laboratory for Universities of Applied Sciences supports long-term cooperative relationships with industry and universities; – COIN programme promotes ties between companies (especially SMEs) and universities of applied sciences, as well as non-research institutions; – Research Competences for Industry: the Ministry for Economy, Family and Youth supports the industry, primarily SMEs, in establishing and raising the qualifications of its innovation staff. The programme aims to establish industry-relevant research at

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		advanced coursework and research; – The Qualification Framework for Austrian Higher Education Qualifications will define key competencies to be acquired during doctoral training.	universities and to promote of inter-sector mobility; – BRIDGE programme offers outstanding researchers an opportunity to develop applications (and patents) of economic and/or societal value by entering into successful partnerships with the world of business, medicine, politics, government or other interest groups in Austria and abroad; – Under the Collective Research Programme, businesses or special interest groups (representing the private sector) assign tasks to research organisations with the aim of developing products/services for the private sector; – AplusB programme supports young researchers in the formation of enterprises; – FIT-IT Programme fosters cooperation between academia and the private sector with the objective of boosting development in the IT sector; – Gen-AU research programme contributes to public-private cooperation through various funding mechanisms; – Intelligent Production Programme supports cooperation between industry and academia to foster highly competitive (intelligent) production; – IV2S Plus Programme supports cooperation between industry and academia to foster the development of intelligent and competitive transport systems; – Nano Initiative supports research and technological development in nanotechnologies through collective (academia/industry) projects; – Take Off Initiative supports collective research and education in the aviation sector; – Laura Bassi Centres promote excellence in application-oriented basic research where highly-skilled researchers from academia and private industry work together.
BELGIUM	– Museum Night Fever in Brussels to attract young people to access and to involve them in the creative use of the museums' exhibit rooms; – Researchers' Night is organised once per year in collaboration with Belgian Universities with a view to informing and attracting (among others) young people (primary school, secondary school and	– Federal Scientific to become Centres of Excellence in close partnerships with Belgian universities in order to enhance the training of human resources. They take part in doctoral schools, at Belgian or EU level, in order to be more visible, to enhance their R&D potential and exchange knowledge; – The budget for doctoral fellowships (both at the	– Declaration of Community Policy promotes doctoral schools and training for researchers working in research centres and private companies and encourages the financing of doctoral theses by companies and the private sector; – Federal State has competence to promote partnerships between academia and industry, only for

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	higher education) to become interested in science and the research profession per se; – Annual Science Communication Action Plan to attract pupils, students and teachers into a research career by promoting science, technology and technological innovation; – Spring Science Season activities target secondary education pupils and aim to communicate and popularise activities around science and scientific careers.	Research Foundation – Flanders (FWO) and the Agency for Innovation by Science and Technology (IWT)) has been raised, thus increasing the number of doctoral graduates; – Support programme for Young Researchers of the Flemish community aims to train young researchers, develop careers and open up career prospects, reinforce the international orientation of researchers' careers and cooperate within Flanders; – Wallonia-Brussels Partnership's action 22: "Increase the number of PhDs in the research sector"; – In Wallonia, doctoral schools were by the decree of 31/03/2004. Life-long learning initiatives are undertaken individually by universities and doctoral schools; – The Wallonia-Brussels Partnership (actions 12 & 13) promote doctoral training programmes and the participation of doctorates in international doctoral schools. The Partnership encourages the organisation of doctoral training programmes by university academies and promotes the acquisition of transversal competences for researchers.	contracts with the European Space Agency; – Agency for Innovation by Science and Technology (IWT) Innovation Mandates are set up with the objective of connecting the academic and the industrial world, and stimulating postdoctoral researchers to improve their skills in maximising the value of their research and to develop their careers, taking a step towards industry; – Baekeland programme funds doctoral projects carried out at a Flemish university in close cooperation with a company; – FIRST Spin-off grants support projects aiming to develop a new product, process or service, and carrying out a technical-market feasibility study for the exploitation of the results and a business plan, with the general goal of launching a spin-off in the Walloon Region; – The objective of the Marshall Plan 2.Green is to encourage enterprise competitiveness and attractiveness and develop synergies with foreign investors; – PRODOC Programme to promote encounters between doctoral candidates, young researchers and economic players via cross-border events, such as the Doctoriales Franco-belges and job forums and foster the employability of young researchers and PhD graduates outside academia.
BOSNIA AND HERZEGOVIA	– Fund Dr Milan Jelić provides financial support to the most talented students of all three levels of higher education; – Programme for young researchers provides financial incentives to researchers to secure their paid full-time participation in science and research projects, in an effort to increase the number of doctorates in science, technology, engineering and mathematics (STEM) subjects; – Scholarships of the Ministry of Education and Culture of Republika Srpska for students of mathematics, natural sciences and technology, so as to promote their career in these professions; – Annual Lump-sum Scholarship for Talented Students of Final Years of Studies at the Higher	– Guidelines for Conduct of Doctoral Studies by the Council for Development of Higher Education and Quality Assurance of the Republika Srpska: the universities in the territory of the Republika Srpska developed and adopted their own Rulebooks for Conduct of Doctoral Studies.	– In Bosnia and Herzegovina, the involvement of the industry sector accounts only for providing financial resources towards the practical application of the R&D results.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	Education Institutions; – Students' Loan Fund disbursing loans or scholarships for students of the first and second higher education cycle.		
BULGARIA	– The National Young Talents Contest aims to attract young students (between 14 and 21) to draw up competitive scientific projects; – The Science Communication contest, Famelab, aims at boosting young people's interest in science. Young scientists are encouraged to present their research ideas in a competitive context; – Sofia Science Festival: young students present science and scientific results to a young audience (including kindergarten children) with the aim of raising young people's interest in science; – Young Researchers Programme supports PhD students in preparing a scientific project; – A new University Rating System (2011) offers young students a comprehensive and transparent overview of the education system. The platform provides an overview of university programmes and a comparison of universities' (performance) at different levels and stimulates students' interest in science and encourages students to pursue a researcher career; – New Law on Academic Staff encourages young students to pursue a career in research; – New Law on School Education introduces a reform of the Bulgarian school system by defining profiles for a broad spectrum of study disciplines. The reform will align the Bulgarian education system with market demands. The document does not provide specific measures aimed at increasing the number of students graduated in science, technology, engineering and mathematics (STEM). However, it provides an overview of different study disciplines and offers a description of possible career paths.	– The "Sciex" Programme with Switzerland: an instrument for increasing the quality of doctoral training in Bulgaria; – National Research Strategy (2010): Develop Bulgaria's research potential by creating attractive conditions for pursuing a scientific career, professional growth, qualifications and specialisation of scientists; – Career Development Centres assist young students in choosing a study discipline as well as finding a vocational training place; – The Law on Scientific Research Promotion regulates the management and application of state policy in the field of scientific research by supporting a range of strategic activities like participation of scientific organisations and universities in international programmes and projects and awarding for research excellence and 'chair competence'.	– National Roadmap for Research Infrastructure (2010) supports networking and cooperation between academia and business by providing expertise and creates conditions for quick commercialisation of scientific products and services to enhance the dynamics of economic development; – Science + Business Project provides a platform for researchers to carry out projects in collaboration with industry. Supported by Universities, research institutes and businesses, the scheme fosters skills and knowledge transfer between the different parties; – Innovation Fund encourages industrial PhDs, and strengthens links between the research community and businesses; – The planned Law on Innovation will stimulate researchers to work for and in small and medium-sized enterprises (SMEs) and also encourage Universities to offer education using innovative programmes.
CROATIA	–	–	– RAZUM programme provides initial funding for newly established knowledge-based companies as well as funding research and development of new products

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
			or services in existing companies; – TEHCRO programme supports commercialisation of research outputs and the transfer of knowledge from universities and scientific institutions to business and also supports development of Technology Business Centres, Technology Incubators and Research and Development Centres; – VENCRO programme ventures capital funds for fast growing small and medium-sized companies based on innovation and advanced technologies; – IRCRO programme supports cooperation between industry and technology institutions, facilitates maximum usage of infrastructure in scientific research centres and supports industrial companies to substantially increase their R&D activities; – EUREKA programme supports innovative SMEs for their international collaborative market-oriented R&D project and is open to all technological areas; – The Croatian Science Foundation funds the Partnership in Research Programme, which aims to improve cooperation between research institutions, industry and entrepreneurship and thus increase extra budgetary investments in research; – Unity through Knowledge Fund unites scientific and professional potential in Croatia and the Diaspora in development of the knowledge-based society through its 'Young Researchers and Professionals' projects and the '3C Research in Industry and Academia Grants'.
CYPRUS	– Mera programme targets elementary and secondary school children (of six to eighteen years old) with the aim of promoting research at school level; – Teke programme targets elementary and secondary school children (six to eighteen years old) with the aim of promoting research at school level; – Foito programme (Students in Research) targets university students with the aim of promoting the research profession within the educational system.	– Didaktor programme aimed at the immediate integration of young post-doctoral scientists (under the age of 40) in the RTDI system of Cyprus in order to implement high level research projects; – The Single-company Continuing Training Programmes aim to provide in-company training and development to employees in order to meet specific needs of the enterprise for the effective utilisation of its personnel. Universities, research institutes and major industries have access to these programmes; – Single-company Continuing Training Programmes Abroad have as primary objective the training and development abroad of employees of an	– Kinhtikothta Action targeted doctoral students and supported them in working in an enterprise that funded a research project; – Innovation Clusters Programme (foreseen in 2012) will promote networking between national enterprises and academia and increases in the number of joint proposals to receive funding; – Mediation Agencies: aim to strengthen the links between academia and enterprises, leading to projects of joint interest and to the exploitation of the research results by the enterprises; – PENEK programme aimed to prepare the next generation of researchers for employment in the Research, Technological Development and Innovation

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		enterprise. Universities, research institutes and major industries can be involved in these programmes; – Standard Multi-company Continuing Training Programmes aim at providing continuing training for meeting the training needs of employees through their participation in training programmes implemented by public or private training institutions and organisations; – High-Priority Multi-company Continuing Training Programmes aim at providing continuing training for meeting the training needs of employees through their participation in training programmes implemented by public or private training institutions and organisations on specific high-priority issues; – Multi-company Continuing Training Programmes Abroad aim at improving and enriching the knowledge and skills of senior personnel of the enterprises in various aspects of business organisation, administration and technology. Universities, research institutes and major industries may utilise these programmes to address the common training needs for their researchers; – The scheme for job placement and training of unemployed tertiary education graduates aims to strengthen the management capacity of enterprises and organisations through the employment and training of young university and other tertiary education graduates; – The scheme for the promotion of innovation in training and development of human resources aims at encouraging enterprises and organisations to prepare and implement proposals that include research and development of innovative ideas for the training and development of the human resources.	(RTDI) system of Cyprus. The main objective was to promote the involvement of young scientists in the working environment of research units/laboratories in research centres and enterprises, and their acquisition of experience in modern research methodologies and research project management in cutting-edge scientific and technological fields.
CZECH REPUBLIC	– Project on 'Support for Technology and Science Fields' aims to implement a system of marketing support for S&T programmes at higher education institutions targeting higher education students. The project activities revolve around three pillars:	– Milada Paulová Award for Life-long Scientific Achievement by a woman Scientist inspires junior women researchers or students who are considering a career in science.	– 'Effective Knowledge Transfer' project covers systems for intellectual property protection and commercial use, commercialisation of R&D results, and cooperation with industry. The project also involves the development of support methodologies for

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	motivation activities, communication of science and support for instruction.		implementation, the creation of networks for effective knowledge transfer and the training of the target group of users in the methodological materials.
DENMARK	– Elite Programmes at Universities targeted at particularly motivated and talented students in order to foster graduates able to take on extraordinary challenges in the academic research or leading positions in the professional world; – ISI 2015 Innovation, Science, Integration Programme to meet the challenge of recruiting the necessary engineers and scientific researchers to Danish industry. Target groups: school students, teachers and management teams; – The NatPLUS project includes four measures for increasing students' interest and achievements in science topics; – Olympiads and Competitions for school students; – The Science Talents Center: targets talented young students (between 12 and 20), who are good at science and technology and with a potential to become the best researchers if their talent is nursed; – Talents Initiative: a group of teachers and advisers who have developed materials for exemplary teaching in all disciplines in upper secondary schools; – National Centre for Science and Education concentrates on the interest and learning of science, technology and health in primary schools, the upper secondary education and technical colleges, as well as the problems of transition in the education system; – Students from a non-academic background co-funded a project to develop teaching in certain chosen subjects to ensure that students from a non-academic background get more out of the tuition and hence contribute to a higher completion rate; – The Science Centre: especially gifted students are granted the possibility of studying at the Science Centre and develop their talents and interests in science.	– Ministerial Order on the PhD Programme at Universities (2007) develops the Danish PhD programme to provide young researchers with quality skills in order to contribute to a knowledge-based economy and society in Denmark. In Denmark, all PhD programmes have to be organised within a PhD School. Each university establishes a number of PhD Schools at faculty or University level. Competency development is included in all employee-employer contracts and agreed upon between the two parties. All categories of professor at Danish Universities are employed both to conduct research and teach students. Danish universities offer courses and training to researchers and part-time teaching staff, often through the Centres for Learning or Learning Labs. Courses are either related to teaching and examination of students or to the development of different types of skills, such as entrepreneurship, management of complex projects and making research accessible to students.	– Application of Science and Languages: The Danish Ministry of Children and Education co-funds a number of collaborative project groups with the participation of upper secondary school teachers, researchers and project managers from universities, museums/science centres and/or private and public companies. The groups develop individual projects and exchange knowledge in a joint project; – Industrial PhD Programme aims to offer doctoral training in cooperation with the industry sector; – Industrial Post-doc Programme (pilot scheme): new doctoral graduates carry out research with financial and technical support from both a university and a company; – Danish Innovation Consortium (IC) Scheme: collaboration between enterprises, research institutions and non-profit advisory/knowledge dissemination parties; – Clusters -Innovation Network Denmark to ensure that smaller enterprises participate in network projects, and that the networks help this target group to make use of other innovation policy initiatives e.g. innovation consortia, innovation vouchers, the knowledge-pilot scheme and the Industrial PhD scheme; – Danish Technological Service System to disseminate new knowledge and technology to enterprises and public institutions in order to support innovation and development, and to deliver technological know-how to enterprises and public Institutions; – Innovation Assistant (Knowledge Pilot) scheme aims at increasing knowledge dispersion throughout the economy by subsidising the employment of University graduates in those SMEs; – Innovation Voucher Scheme inspires SMEs to utilise the opportunities and make use of the potential knowledge of Institutions.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
ESTONIA	– Science communication programme TeaMe promotes young people's interest in science and technology; – Teeme Call funds science communication events, science camps, technology days, and get-together activities for university students and high school pupils; – Pupils' Inventor Contest: schools organise science conferences and seminars at which students present and discuss their work and meet with scientists; – Gifted and Talented Development Centre and the University of Tartu offer pupils interested in science an opportunity to further develop their scientific knowledge and skills; – Science Bus Suur Vanker ('Big Dipper'): physics students from the University of Tartu and from the Estonian Physical Society demonstrate interesting physical experiments to the general public; – Association of Young Scientists promotes careers in science and technology among secondary school students; – The Primus Programme aims at improving the professional competitiveness of higher education institution graduates.	– AHHAA Science Centre: the initiative also serves to strengthen the scientific excellence of participating researchers; – 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 doctoral candidates and to increase the efficiency of doctoral studies in Estonia through interdisciplinary, international and national cooperation; – Standard of Higher Education, Regulation No 178 of 18 December 2008: doctoral study programmes usually include training in transferable skills to improve researchers' employment skills and competencies; – The Estonian Rectors´ Conference endorsed the "Quality Agreement" among Estonian universities encouraging the inclusion of transferable skills' training in doctoral studies curricula.	– Joint activities of Ministry of Economics and Communication, and Ministry of Education and Research to support the development of entrepreneurship, launch mobility schemes to facilitate two-way movement between academia and enterprises; – Product Development Grants are available to entrepreneurs and universities in support of the development of products and services with high added-value; – Technology Competence Centre grants aim to increase Estonia's international competitiveness by strengthening cooperation between entrepreneurs and research establishments; – Innovation Voucher Grants aim to boost the competitiveness of Estonian SMEs through knowledge and technology transfer, expanding cooperation with R&D institutions and increasing the capability to protect intellectual property rights; – The SPINNO Programme promotes cooperation between research and development institutions and enterprises; – Ajujaht Business plan competition is a start-up competition for young entrepreneurs creating innovative businesses; – DoRa Doctoral Studies and Internationalisation Programme: Activity 3 of the "DoRa" Programme - Training doctoral students in cooperation with businesses – actively assists innovative companies by funding the creation of doctoral student places.
FINLAND	– A committee on alleviation of segregation (appointed in 2010 by the previous Minister of Education) put forward 25 proposals for action related to alleviating segregation in education and training; – Millennium Youth Camp offers young people of 16-19 an overview of Finnish expertise and top-level research in the natural sciences, mathematics and technology; – SciFest is an international science and technology festival, bringing together thousands of schoolchildren, high school students and teachers;	– National Guidelines for the Development of Doctoral Training' (2011); – The Ministry of Education appointed a committee to prepare a National Qualifications Framework describing qualifications and other learning: (according to the European Qualifications Framework) was published in August 2009.	– LUMA Center umbrella organisation coordinated by the Faculty of Science of the University of Helsinki to bring schools, universities and industry together and to promote the learning, studying and teaching of natural science, mathematics, computer science and technology at all levels; – Academy Project funding is designed to promote the quality of research, the diversity of research and its capacity for renewal and provides researchers with an opportunity to carry out scientifically ambitious research, to achieve new breakthroughs and to engage in high-risk research, simultaneously

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	– Viksu - the Academy of Finland's science competition for senior secondary students: competition that provides students with an opportunity to try their wings in the field of scientific work.		encouraging inter-sectoral mobility; – Doctoral studies of employed persons are granted for jointly funded research training where the other party is a company, research institute or an organisation within the public administration; – Strategic Centres for Science, Technology and Innovation: cooperation platform for innovative companies and spearheading research.
FRANCE	– Most public research organisations implement policy measures to attract young people to research and help teachers to involve young people in research by means of events, visits to scientific sites, lectures in schools, workshops, conferences, competitions, symposiums in partnerships with several research organisations, etc.; – Annual 'Young female mathematician workshop' in association with 'Women and Mathematics' to create networks, fight self-censorship and detect potential obstacles in career development; – National initiatives have been under way for 10 years on the issue of young female students' career choice. They primarily focus on high school students.	– Investments for the Future programme offers many opportunities for PhD students in laboratories of excellence or via excellence initiatives in all scientific disciplines, including STEM subjects; – Irene Joliot-Curie Prize to propose role models for young researchers; – As of September 2010, 285 doctoral schools (Ecoles Doctorales) with 70 000 doctoral students were accredited by the Ministry of Higher Education and Research. The doctoral schools are established under an agreement between the State and universities (contrats d'établissements). The doctoral schools provide training and development for participants. They offer future PhD holders high-level scientific supervision as well as preparation to enter the labour market; – PRES Joint entities to ensure coordination between doctoral schools. PRES may decide to deal with the coordination of doctoral training; – Jointly supervised international doctoral training (co-tutelle internationale de thèse).	– Doctoral training in cooperation with industry and other relevant employment sectors; – Carnot Institutes Network aims to improve inter-sectoral knowledge circulation through partnership research; – The CIR (Crédit d'Impôt Recherche) is a research tax credit which aims to encourage private sector companies to carry out more R&D. To be eligible, companies must hire young PhD holders to carry out research; – Technological research institutes bring together public and private laboratories dedicated to a specific area of technology.
MACEDONIA (F.Y.R.)	– National Strategy for the Development of Education aims to create opportunities for improving education and training, research, development and promotion of cultural values for young people and adults. It also strengthens the collaboration between industry and academia.	– Project entitled 'Equipping Laboratories for Scientific Research and Applicative Activities' (2009-14), aims to advance research at state universities and public scientific organisations by creating and equipping research laboratories.	– Memorandum for Cooperation between the main universities and chambers encourages them to cooperate via the organisation of mutual training programmes. Enterprises which are members of the chambers provide internships for students.
GERMANY	– Student Universities ("Schülerunis"): a number of German universities offer excellent students from grammar schools the opportunity to attend lectures and courses and earn credit points while still at school; – Tiny Tots Science Corner (Haus der kleinen Forscher - HdkF) Initiative (Helmholtz Association)	– Helmholtz Association provides structured doctoral training in the form of research schools and graduate schools and grants universities access to the Helmholtz Association's laboratories and research infrastructures. The Helmholtz Research Schools are joint programmes established on the basis of cooperation agreements between	– The Robert Bosch Centre for Power Electronics (RBZ), a research and teaching association formed by the Bosch Group, the University of Stuttgart and the Reutlingen University, offers Bachelor's and Master's degrees for students specialising in power electronics and microelectronics. Students can also pursue PhDs at the RBZ. The Centre's close cooperation with

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	aims at increasing the interest of young people (three to six years old) in science and technology by giving them an opportunity to conduct experiments and solve problems on their own; – School Labs Initiative aims at addressing the impending shortage of researchers in Germany. More than 50 000 pupils visit the school labs together with their teachers every year to conduct experiments and to learn about interdisciplinary scientific thinking and work; – KidsKreativ! Initiative encourages and trains young people to become researchers; – Summer Academy to raise young people's interest in science and technology; – Fraunhofer Talent Schools Initiative gives young people between the age of 15 and 18 an opportunity to get to know the Fraunhofer research landscape; – The Talent Take Off programme offers different forms of support to young people embarking on a university degree; – The "Strascheg Center for Entrepreneurship" and the long-established "TheoPrax" programmes aim at promoting young people's entrepreneurship skills. Pupils from different schools (secondary general schools, intermediate schools, vocational schools and academic secondary schools) work on business and science-related topics; – Fraunhofer Pilot Project organises workshops for pupils between 10 and 12 years aimed at teaching knowledge, methods and interpersonal skills.	Helmholtz Centres and universities with the aim of supporting young researchers. The Research Schools provide structured doctoral training over a period of three years in areas of mutual scientific interest and scientific excellence. The Graduate Schools offer PhD students an interdisciplinary education that teaches them important skills for a career in science or the private sector; – Sixty International Max Planck Research Schools offering special training programmes or events for all career levels; – Taking the Lead: a talent management concept for the continuous scientific and interdisciplinary education of researchers at all levels of their careers. The programme not only includes mentoring, but also training activities (personal presentation, public speaking, individual coaching and networking); – Graduate Academies and Research Schools of universities.	Robert Bosch GmbH ensures that students receive industry-relevant training; – Fraunhofer Society 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.
GREECE	-	– Post-docs Programme (2007-2013) offers fellowship programmes for doctorates and post-doc researchers in Greek universities. The scheme supports young researchers in their research activities and thus in establishing a research career in Greece; – Under Part IV of the law 4009/2011 for higher education institutions, lifelong learning activities are a matter for the concrete regulations of each individual institution. Higher education institutions have the possibility of organising lifelong learning	– PENED Programme provided funding to young researchers. In addition, it offered research training to young researchers for three years while writing their doctoral thesis. S&T companies (located either in Greece or abroad) co-funded the Programme and thus supported the beneficiary in accomplishing his/her research. The company was allowed to exploit the research results, which could enter the market as scientific products and services; – Clusters Programme is designed to create public-private partnerships amongst companies, universities,

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		training sessions and increasing the quality of doctoral training through collaboration with national and international higher education and research Institutions.	research organisations, associations, and chambers of commerce and crafts in order to boost; competitiveness, entrepreneurship and innovation – COOPERATION 2011 – Partnerships between businesses and research bodies in specific research and technological sectors; – CREATION - Support to new innovative enterprises, notably highly knowledge intensive (spin off and spin out); – Innovation Vouchers for SMEs: fosters exchange of expertise and consultant services between 'innovation agents' (i.e. universities, research centres) and companies; – Action 'Supporting businesses with the aim of employing highly qualified scientific personnel' (under the Human Resources Development Operational Programme).
HUNGARY	– Research University Programme aims to provide funding for HEI-based research for their proposed research activities and R&D infrastructure development plans; – Support for scientific workshops and schools aims to support scientific colleges, PhD schools and scientific student groups to organise scientific workshops and schools.	– Hungarian universities develop and promote their own post doctoral programmes financed by the State. When an education institution plans to introduce a new PhD curriculum, it needs the approval of the Hungarian Accreditation Committee. The Act on Higher Education (2005) further supports the strategic ambition of increasing the quality of doctoral training in Hungarian institutions. On 1 January 2012, a new Act on Higher Education came into force.	– The R&D Labour Force Programme aimed to support R&D projects in order to foster the development of the R&D sector's workforce by creating new workplaces at SMEs, research institutions or non-profit research institutions, and employing highly qualified researchers, who had lost their jobs because of the world economic crisis.
ICELAND	– The Science and Technology Policy Council recommendation to "encourage institutions and companies to apply for funding in the 'People' Programme within the EU 7th Framework Programme (Marie Curie)" and "encourage people to enrol in technical and vocational studies".	– The Centre of Excellence Programme (2009) was established to create better cooperation and circulation of knowledge between the university, Public Research Organisation (PRO) and business sectors, such as the Centre for artificial intelligence and simulation technologies, the Centre for geothermal research or the Centre for gender/equality research; – One of the flagship activities of the Science and Technology Policy Council is "to considerably enhance measures such as lifelong learning on the labour market, guidance and counselling, recognition of real competences and other solutions that may provide further opportunities and motivations for people and companies to	– The Icelandic Student Innovation Fund aims to provide opportunities for universities, research institutions and companies to recruit graduate and postgraduate students to undertake research projects during the summer; – Growth Agreements, regional development contracts among national government, local business local authorities and regional development agencies, reflect the government's emphasis on innovation policy, by encouraging R&D at regional level via clusters of local SMEs and other businesses, regional and external universities, and research organisations; – Act allowing innovation companies to deduct 15% annually of their annual research and development expenses from income tax liabilities.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		strengthen their position".	
IRELAND	– As part of the implementation of the revised primary school curriculum, science was introduced to all primary schools from September 2003 to help children develop scientific skills; – The Irish government introduced Discover Science and Engineering (DSE) as its national science awareness programme at the primary and secondary level, which in the longer term will feed into the third level, (i.e. universities and Institutes of Technology) and also the PhD level, e.g. MyScienceCareer.ie; – The government in 2003 launched a revised syllabus in Junior Certificate science. 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; – The STEPS Engineers Ireland Programme (2005) encourages 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; – The Deans of Science have established a network promoting science, including science demonstrations at the Young Scientist Festival, school debating and other competitions, the Science Raps Challenge and Science Speak competitions; – 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.	– The seven Irish Universities together with the Higher Education Authority (HEA) have formed a 'Fourth Level Ireland' Network, to mediate and help direct the changes in doctoral education; – The national funding agencies for research and innovation also provide support for human capital development; – Science Foundation Ireland includes provision for training researchers in line with national targets in its funding programmes; – The Irish Research Council for Science, Engineering and Technology and the Irish Research Council for the Humanities and Social Sciences identify and support excellent early career researchers throughout the research system across all disciplines, with a focus on career development; – The National Academy for Integration of Research and Teaching and Learning (NAIRTL) provides training for academics to develop their supervising and mentoring skills; – Fourth Level Ireland Network has compiled an 'Irish Universities' PhD Graduates' Skills Statement', which is consistent with national descriptors of PhD graduate attributes. Typical PhD programmes enable the students to identify a tailored set of relevant course modules to develop disciplinary, transferable and generic skills.	– Enterprise Partnership Scheme (ELEVATE scheme). This scheme will allow experienced researchers to spend two years at an enterprise/industry host laboratory outside Ireland, followed by a return year at an Irish Higher Education Institution; – Programme for Research in Third-Level Institutions enhances PhD education and training, so as to enable the system to deliver PhDs with skills sets for working across the spectrum of the public and private sectors; – Research Centres Programme 2012 scientists and engineers are linked in partnerships across academia and industry to address crucial research questions, foster the development of new and existing Irish-based technology companies, and expand educational and career opportunities in Ireland in science and engineering.
ISRAEL	–	– Six-Year Plan for the Higher Education System (2010) aims to encourage excellence in research by putting emphasis on the publication of scientific papers	– The Kamin programme aims to improve academic-industrial cooperation at an early stage by giving grants to university researchers whose ideas might have commercial potential

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
ITALY	– Week of Scientific Culture and the organisation of similar events by Italian institutions during the European Union's 'Researchers' Night' aim to make young people more familiar with and attract them to science; – The National Plan for University Science Degrees introduced an improved approach to teaching to increase of the number of enrolments in scientific disciplines at university level.	– The forthcoming Regulation on Doctoral Studies, issued as an ad hoc Decree, under the provisions of Law 240/2010, will propose concrete measures to increase the quality of doctoral training. Doctoral Programmes will be assessed and evaluated at national level by the Ministry of Education, Universities and Research, on the basis of an evaluation performed by the National Agency for the Evaluation of Universities and Research Institutes (ANVUR); – Higher education institutions are increasingly providing a variety of training and several skills portfolios on an autonomous basis.	– Law 240/2010 on the General Reform of University Education establishes a legal framework for regulating partnerships between academia and industry. Thanks to their autonomy, Italian universities are free to establish bilateral relations with the business sector; – A high level apprenticeship contract (contratto di alto apprendistato) with an enterprise. Enterprises and other (private) employers can recruit a PhD student (under the age of 29) under a fixed-term contract subsidised by the local (regional) governments; – Decree 297/1999 allocates financial contributions to SMEs where a researcher from a university or a (public) research centre is employed by the company for a period of at most four years, renewable only once (eight years in total).
LATVIA	–	– In 2009/2010, the University of Latvia and the Riga Technical University set up the first doctoral schools in Latvia.	– Indicative activity 1.3.1.9. Attraction of highly qualified employees (ESF): strengthens businesses' competitiveness and promote research activities in enterprises by attracting qualified employees – both doctorate students and graduates, research personnel of academic institutions and institutes, as well as highly qualified specialists from abroad - for the development of specific technologies and new products; – Indicative Activity 2.1.1.1. Support to science and research (ERDF): facilitates the integration of science and industry in areas such as agro-biotechnology, informatics, biomedicine, pharmaceutics, energy, material science, forest science, medical science and environmental science; – Indicative Activity 2.1.2.1. Commercialisation of science and transfer of technologies (ERDF): boost the commercialisation of science and transfer of technologies by promoting cooperation between research and industry in the implementation of projects of industrial research (applied research) and the development of new products and technologies.
LIECHTENSTEIN	–	–	– Advisory Council for Research and Technology, organised by the chamber of commerce and industry, operates as a platform on research activities, bringing together the national firms.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
LITHUANIA	– Researchers Career Programme contains a set of measures aimed at raising young people's interest in pursuing a research career by offering attractive working conditions and clear career prospects at all career stages; – Students' Research Practice programme: designed for Bachelor and Master's students, it aims to raise young people's' interest in pursuing a career in research; – Post-doc Internship implementation in Lithuania: competition-based Programme supports researchers' in taking-up a post-doc position; – Scholarship Support for students; – Student Vouchers to the best entrants applying to universities and colleges. Student vouchers are awarded to incoming students based on their secondary education graduation results; – The National Higher Education Programme (2007-13) supports the development of students' and professors' skills and competencies. Moreover, the Programme provides financial support for the development of Lithuania's research infrastructure.	– The Regulation on Doctoral Training (2009) paved the way for a new approach to PhD training in Lithuania. The right to provide doctoral training is granted by the Minister of Education and Science. Universities and research institutes enjoy a joint right to train PhDs; – The Lithuanian Research Council supervises doctoral training and evaluates research activities; – The Ministry of Education and Science has granted EUR 135 510 in support of Industrial Property Rights (IPR) protection. Implemented by the Agency for Science, Innovation and Technology (MITA), the measure aims to encourage universities, research institutes and companies to protect their intellectual property. In addition, it encourages stakeholders to cooperate more closely in the development of innovative and competitive products.	– 'State aid for highly qualified persons' employment in enterprises' for period 2010-2013; – 'High technology development programme' for the year 2011-2013 (EUR 2.6 million): boost the development of hi-tech trends with scientific potential, which enable the creation of new competitive products; – 'Industrial biotechnology development programme for Lithuania' for the period 2011-2013; – The Ministry of Education and Science has granted EUR 135 510 in support of Industrial Property Rights (IPR) protection: encourage universities, research institutes and companies to protect their intellectual property.
LUXEMBOURG	– The National Research Fund (FNR) finances and organises and/or co-organises the biennial "Science Festival" and "Researchers' Night" in Luxembourg. The FNR also runs two networks: a) "Go for Science" - where participants from the university, secondary schools, primary schools, after-school care, museums and non-profit associations meet to exchange ideas and to get ideas for study workshops, hands-on experiments and school project weeks and b) "ProScience" – where all major public research actors, as well as the Ministry of Education and the Service National de la Jeunesse (the National Youth Service), communicate in order to facilitate the organisation of promotional activities and increase the research institutions' support for promoting scientific culture; – AFR Grant Schemes (PhD and post-doc) aim to attract students to take science to an advanced	– The Government of Luxembourg is planning to set up a series of doctoral schools for PhD candidates in order to improve researchers' employment skills and competencies (e.g. Doctoral school in Educational Sciences, Doctoral School in Systems and Molecular Biomedicine, Doctoral School in Economics and Finance).	– Public-Private Partnerships under the AFR supports researchers to carry out their PhD and/or post-doc training in collaboration with a private company in Luxembourg.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	(doctoral) level by promoting and financing research science.		
MALTA	– The Malta Government Scholarship Scheme provides scholarships to individuals wishing to pursue undergraduate or postgraduate studies both in Malta as well as overseas; – The Government plans to develop Malta's first National Interactive Science Centre; – 'Researchers' Night' events providing interactive science entertainment for children and the general public; – The Government maintains a Science Centre for secondary school students. The centre is open to visits by both public and private schools; – The Maltese government annually holds several Science Fairs for the general public and related promotional activities; – The Strategic Educational Pathways Scholarships Scheme provides scholarships to individuals wishing to pursue postgraduate studies, both in Malta as well as overseas; – The University of Malta endeavours to provide junior academic staff (assistant lecturers) with the opportunity and with assistance to obtain a PhD. Obtaining a doctorate is a prerequisite to promotion to the grade of lecturer and to further promotion.	– The draft R&I Strategic Plan 2011-20 takes into consideration and promotes such provisions as: "Formal researcher training (at Master or Doctorate level) should include training on issues such as information seeking and management, entrepreneurship, patenting, networking skills and exposure to the industry world among others"; "Formal education should put strong emphasis on numeracy, literacy and thinking skills as the basic tools needed by the students to progress successfully in their education"; and "Students should be encouraged to participate in national and international science projects and competitions which build their creative and entrepreneurial skills".	– The National Research and Innovation Programme provides grants to academia and industry to fund research projects; – National Strategic Plan for Research and Innovation 2007-2010 provided grants to academia and industry to fund research projects. Academics who obtained funds through this programme regularly employed research officers who often worked towards obtaining their doctorate; – Loan of Highly Qualified Personnel' Scheme provides SMEs with a cash grant for the temporary engagement of specialised personnel from an academic background; – Malta's draft National Strategic Plan for Research & Innovation - A Vision for Knowledge-Driven Growth 2011-2020 aims to help enterprises invest in R&D activities by supporting pre-R&D activities necessary to develop and test the concepts of the envisaged research project.
MONTENEGRO	– Amended Higher Education Act (2010) introduces the integrated university, the three-cycle system, the European Credit Transfer System (ECTS), the Diploma Supplement and the council of Higher Education and Quality Assurance (internal and external);	– The new Law on scientific research activities introduces international quality standards	–
NETHERLANDS	– The Ministry of Education, Culture and Science funds the Netherlands Centre for Science and Technology and its NEMO Science Centre to implement policies for science communication; – National Platform Science & Technology to ensure sufficient availability of people who have a background in scientific or technical education. The Platform continues to target schools, universities, businesses, ministries, municipalities,	– Netherlands Organisation for Scientific Research has developed a programme to strengthen the Dutch PhD system by offering schools a funding opportunity for the appointment of four PhD students.	– Universities, research institutions and industrial partners cooperate closely to create or support different tools to develop partnerships between academia and industry; – Dutch government's 'Top sector policy' aims to boost the innovation climate through the creation of and collaboration in public-private partnerships.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	regions and sectors to ensure that the future supply of knowledge workers will meet future demand; – 'Deltaplan Bèta Techniek', a memorandum on preventing shortages in education. The memorandum aimed to achieve in 2010 a structural increase of 15% more pupils and students in scientific and technical education and to use existing talent more effectively in businesses and research institutes – Specific schemes at the Netherlands Organisation for Scientific Research and at universities stimulate talented students to enter science and research careers.		
NORWAY	– Many secondary schools have established agreements with nearby universities and university colleges enabling gifted pupils in natural sciences to substitute classes at tertiary level for classes at secondary level; – Science Centres are popular scientific recreation and learning centres of technology, natural sciences and mathematics for children and adults. The Science Centres do not focus on disseminating the results of research, but on sharing with the public the sheer excitement of scientific work and experiments; – Norwegian HEIs organise annual student recruitment weeks; – Act relating to Universities and University Colleges (2005) requires all Norwegian masters' programmes to include a thesis (or other independent work in disciplines where that is relevant) evaluated by external examiners. In the National Qualifications Framework for higher education (2009), the learning outcome descriptors at the bachelor's, master's and PhD levels are designed so as to assure training for research as part of the qualification; – The Research Council of Norway has launched several initiatives to attract people to become researchers, including Researchers' Night events, the Nysgjerrigper Science Knowledge Project for	– Doctoral schools operate either at institutional or at national level (e.g. the Norwegian National Graduate School in Teacher Education, Climate Dynamics, Business Economics and Administration); – Leading universities and research institutions offer various training programmes in doctoral schools to improve researchers' employment skills and competencies. The type of training involves methods, statistics, ethics, intellectual property rights awareness as well as management; – Life-long learning is provided to researchers to favour their professional and academic development, including at the highest academic levels. The White Paper Climate for Research (2009) called for recognition of the need for lifelong learning, including flexible pathways through the education and training system, and flexible provisions (in time, space and mode).	– The Centres for Research-based Innovation (SFI) scheme seeks to promote innovation by providing funding for long-term research conducted in close cooperation between R&D-performing companies and prominent research groups. The scheme is designed to enhance technology transfer, internationalisation and researcher training; – The FORNY programme provides funding for the development of business ideas based on R&D results from universities and university colleges; – The Industrial PhD scheme provides support to companies operating in Norway hiring an employee seeking to pursue an ordinary doctoral degree at a degree-conferring university or university college; – The SkatteFUNN tax deduction scheme for companies is flexible and easy-to-use for costs related to research and development. All companies subject to taxation in Norway are eligible to apply for a deduction, regardless of the industrial sector, size or geographic location; – 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.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	children, the Proscientia project (promoting interest in research and science among young people aged 12-21 years old) and an Annual Science Week – The Norwegian Contest for Young Scientists, a writing competition on freedom of expression; – Maths and science Olympiads; – The KappAbel competition (Nordic competition in mathematics for school classes); – The FIRST LEGO League; – Applicants for higher education who have 'in-depth' science courses at the upper secondary level (in Mathematics, Chemistry, Physics, Biology and Information Technology) obtain more competitive points than applicants with other subject combinations; – All female applicants to engineering studies (with the exception of chemistry, where there is no shortage of female students) are awarded two additional competitive points compared to male applicants.		
POLAND	– The Act on the National Science Centre to guarantee that at least 20% of all Centre funds are earmarked for research conducted by junior scientists; – The Diamond Grant is a special career path for one hundred of the most talented students in Poland. Beneficiaries can start scientific research leading to a doctoral degree immediately after getting a bachelor's or engineering degree, without needing to take a master's; – Iuventus Plus Programme is designed to increase the interest of young scientists in conducting research at the highest level and encouraging them to publish their results; – The MISTRZ Programme supports distinguished scholars by awarding them grants designed either to intensify the research they are already conducting or to explore new fields of research; – The special doctoral grants target 30% of the best doctoral students. Thanks to the financial support	–	– LIDER Programme aims to encourage scientists to cooperate with businesses while performing economically valuable and implementable studies, and research, and enhancing mobility and exchange between research sectors, universities and research units; – The Ministry of Science and Higher Education has developed 'A Guide. R&D Commercialisation for Practitioners' which provides information to practitioners on the commercialisation of research results; – Higher Education Act facilitates cooperation between academia and industry, and requires institutions to adapt the curriculum to actual market needs; – AGH University of Science and Technology aims to create closer links between the worlds of science and business and support the integration of the knowledge triangle, i.e. higher education, research and innovation; – INNOTECH programme aims to help research entities

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	the best Polish scientists will be able to focus even more on scientific work, also taking advantage of other, additional forms of the grant system for doctoral students; – In 2008, the government introduced the academic programme 'Increasing the number of graduates of degree programmes of key importance for a knowledge-based economy' to stimulate young students' interest in science, technology, engineering and mathematics (STEM) studies.		and businesses carry out innovative projects in various scientific areas and industrial sectors (In-Tech programme path), with a special focus on advanced technologies (Hi-Tech programme path); – Innovation Creator Programme motivates researchers financially to raise their qualifications in the areas of enterprise, intellectual property management and commercialisation of research results. It also encourages the establishment of a dialogue and improved standards of communication between science and the commercial economy; – The National Centre for Research and Development is an intermediary between the worlds of business and science; – Top 500 Innovators Science – Management – Commercialisation Programme targets researchers and technology transfer employees working at Polish HEIs, research institutions, Polish Academy of Science institutes and the Academic Centre for Technology Transfer by giving them the opportunity to take part in training sessions and internships relating to commercialisation of research results at the best universities in the USA; – Ventures programme: supports projects of students, graduates and PhD students which have potential for a practical economic application. The 7th edition was carried out in 2011. Successful projects receive funding for 1-3 years.
PORTUGAL	– The Fundação para a Ciência e a Tecnologia is implementing a major fellowship programme, including five year contracts for PhD holders and post-doc, and PhD grants in an effort to increase the number of students taking science to a doctoral level.	– Advanced training of R&D Human Resources; – All PhD programmes promoted by Portuguese Universities are accredited and evaluated by the National Evaluation and Assessment Agency (A3ES) which guarantees their quality. The Agency also has the mandate to provide the Portuguese State with expertise in matters of higher education quality assurance, participate in the European quality assurance system (EQAR), and coordinate assessment and accreditation activities in Portugal with international institutions.	– Doctoral degree grants in a company in Portugal (Article 30 §1 of Decree Law No 74/2006, of 24 March 2006), for the purpose of carrying out doctoral degree work in the business environment on subjects of interest to that enterprise, as long as this work is accepted by the university that confers the respective doctoral degree.
ROMANIA	– National Pact for Education and Research.	– START programme for the training of young entrepreneurs; – 2005-2012 Programme for the development of	– Programmes supporting research collaboration between national and foreign research organisations; – Programmes supporting participation of national

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		entrepreneurial culture for women managers in SMEs; – 2006-2012 Programme supporting SMEs' access to training and consulting services; – National Plan for R&D and Innovation 2007-2013 aims to restructure doctoral programmes and establish schools of excellence.	teams in projects involving inter-governmental research infrastructures.
SERBIA	– The Mathematics high school campus in Belgrade, which enrols the most talented young mathematicians and others interested in natural sciences from across Serbia; – The new science and innovation centre in Belgrade promotes popularisation of science in the general public, including young people.	– Centres of Excellence; – The Petnica research centre which welcomes young trainees, many of whom become leaders of science research in Serbia; – Strategy on Development of Vocational Education in the Republic of Serbia.	– Mini Grants programme aims to stimulate the creation of innovative enterprises and expand employment opportunities for young graduates.
SLOVAK REPUBLIC	– Measure 4.1.2 in the Long-Term Plan of the State Science and Technology Policy. in the Strategy of this long-term plan aims to raise young people's interest in research and development; – The Strategy for the Popularisation in Society of Science and Technology encourages talented students and young researchers to pursue the researcher profession, and it supports the development of new research departments in institutions and companies; – The establishment of the National Centre for Science and Technology in Society will support the Government in its efforts to popularise science and technology. The prime objective of the National Centre is to "popularise science and technology across the Slovak Republic and looking abroad"; – Workshops and lectures: the Scientific Hour; – Workshops and lectures: the Scientific Café – Science in Centre; – Workshops and lectures: the Scientific Patisserie; – The Slovak Research and Development Agency (SRDA) offers a grant under a programme called 'Programme for Human Resources in Research and Development and Popularisation' aiming to increase the R&D job opportunities and improving researchers' working conditions at a post-doc level while promoting the international collaborations	– The Agency of Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU (ASFEÚ) is responsible for managing the Operational Programme (OP) Education : One of the priority axes under the Operational Programme Education is Axis 2 'Life-long Learning as the Basic Principle of a Knowledge Society' with the aim of supporting life-long learning in different R&D sectors and increasing the quality of education; – The update of the Long-Term Plan of the State Science and Technology Policy by 2015 (Phoenix Strategy) promotes life-long learning activities by supporting joint doctoral programmes in English, developing life-long learning training courses at a post-doc level and encouraging international cooperation schemes between Slovak and foreign institutions.	– The Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of the EU (ASFEÚ) encourages knowledge transfer between academia and industry; – The Slovak Research and Development Agency to encourage research collaboration between university departments and institutes, and the business sector to increase private sector investment in research and education: a) VMSP 2007 and 2009 - Programme for Research and Development SMEs to promote technical and technological development and innovation in SMEs, with special attention to micro-enterprises, spin-off and start-up firms and b) SUSPP 2007 and 2009 - Programme for the Cooperation of Universities and the Slovak Academy of Sciences with Entrepreneurship to boost investments from the private sphere into research and education; – The Slovak Innovation and Energy Agency aims to strengthen the links between industry and research through the creation of regional innovation structures involving municipalities, universities, academy institutes and firms.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	between the national and foreign R&D institutions.		
SLOVENIA	– National Research and Development Programme provided opportunities for training graduates to attract them to a research career; – 'Young Researchers' Programme aims to increase the number of students to follow PhD studies, incorporating specific measures to promote research in science, technology, engineering and mathematics (STEM) subjects; – Development Project on Knowledge-based Society promotes science education in schools and offers opportunities for young foreign researchers to come and study in Slovenia; – Science Promotion Programme; – Slovenian Fusion Association maintains an exhibition on fusion energy that is permanently open to primary and secondary schools and is visited by their pupils/students from the entire Slovenia.	– The Slovenian government is planning the establishment of 'Career Centers' at Universities and the implementation of new doctoral programmes for innovation, industry, sustainable development etc; – Resolution on National Higher Education Programme 2011-2020 includes the entire area of tertiary education, which in addition to higher education institutions, also includes higher vocational colleges; – Universities establish special lifelong learning programmes that offer access to special competencies for career development as well as for the daily life of a researcher (e.g. University of Ljubljana's Doctoral school); – Based on the Research and Development Activities Act (Uradni list RS no. 96/02), all study programmes must ensure that knowledge and skills are obtained in accordance with the national qualification framework, including innovation, critical thinking, ability to operate in international environment, etc.	– 'Young researchers in the economy' intends to introduce more highly-educated staff in private companies and stimulate companies to hire young graduates to enhance their R&D and innovation activities; – Young Researchers for Industry Programme gives incentives to enterprises that employed young doctorate holders; – Industrial Doctorate Programme; – Innovative Doctorate Programme.
SPAIN	– International Olympics in Physics and Mathematics as well as Spanish Olympics in Informatics targeting secondary school children; – Summer campuses on university campuses under the auspices of the International Campus of Excellence (CEI) Programme; – Master Plan of Mentoring and Guidance of Students.	– The Spanish Strategy for Science and Technology as the new framework for doctoral studies includes 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 CEI Programme); it also promotes public-private collaboration agreements, including training provisions for research staff; – 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); – At regional levels, training initiatives have also	– Innpronta Programme offers grants to promote stable public-private cooperation in R&D; – Feder-Innterconecta Programme finances large-scale integrated experimental development projects in forward-looking technological areas; – CENIT Programme stimulates cooperation in R&D&i among businesses, universities, public or private research and technology centres; – INNPACTO sub-programme fosters steady cooperation between research organisations and firms supporting collaborative R&D&I projects focused on market demand; – INNFLUYE sub-programme funds the creation and strengthening of Spanish Technology Platforms, i.e. public-private groups which work on developing and updating agendas of R&D and innovation priorities for their particular sector; – INNCORPORA sub-programme funds hiring of R&D personnel by the private sector (companies,

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		been developed to improve researchers' employment skills and competencies, e.g. the Future Researchers' Workshops and the Project Management Workshops implemented by the Autonomous Community of Catalonia.	technology centers, support centers of technological innovation, business associations and science and technology parks) and subsidises their training in Innovation Management.
SWEDEN	–	– Since 2001, the Swedish National Agency for Higher Education has had the responsibility of the quality of the higher education system. Its duties includes evaluations of the study programmes and their subject areas; – Some Swedish universities offer research communication skills, IPR-awareness, career management and entrepreneurship training in their effort to improve researchers' employment skills and competencies.	– A Boost to Research and Innovation (Government Bill of 2008) establishes technology transfer offices at eight universities promoting innovation and the use and transfer of knowledge in order to facilitate commercialisation of research results; – The governmental agency VINNOVA also promotes sustainable growth by financing RTD within areas as technology, transport, communication and working life, and developing effective innovation systems. VINNOVA was granted EUR 10 million by the government for doctoral candidates in order to increase the number of industry-based doctoral students; – The VINN Excellence Centres (2004-15) are developed by the Swedish Competence Centres Programme (Centres of Excellence in Research and Innovation) and aim to strengthen the crucial link in the Swedish National Innovation System between academic research groups and industrial R&D.
SWITZERLAND	– The Swiss Youth Science Foundation, an independent non-profit organisation, aims to stimulate young people's interest in science; – The Confederation supports a plethora of measures aimed at attracting (young) people into a researcher career, such as the so-called 'matching platform', providing information on activities related to Science, Technology, Engineering and Mathematics (STEM) subjects; – Starting Doc Programme: Swiss universities invest substantially in the recruitment and training of future researchers. Future doctoral candidates are identified already at the Bachelor and Master's level.	– Swiss National Science Foundation Programmes strongly promote researchers' education at all stages of their careers in assisting doctoral theses, training of researchers and supporting scientific publications; – Ambizione Programme supports excellent (foreign) post-doc researchers in conducting, managing and leading an independently planned project at a Swiss university; – Strategic Planning Programme for 2012-16 aims to improve researchers' working conditions and their career prospects; – ProDoc Programmes (SNSF + CRUS) provided training schemes for researchers in order to enable them to complete their doctorate; – The Doctoral Programme provides financial support to inter-institution programmes aiming to support research networking and improve integration of	– Commission for Technology and Innovation (CTI) supports R&D projects, entrepreneurship and the development of start-up companies and helps optimise knowledge and technology transfer; – KTT Initiative fosters the transfer of Knowledge and Technology Transfer (KTT) between the universities and regional businesses; – BREF Programme (Gebert Rüf Foundation + KFH) promotes collaboration between Switzerland's business sector and the Universities of Applied Sciences; – The National Research Programmes promote innovative solutions aimed at solving Switzerland's most pressing problems in collaboration with industrial partners.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
		doctoral students; – Swiss Universities and Swiss Universities of Applied Sciences offer continuing education to researchers. Researchers acquire transferable skills by conducting independent research. At the same time, the skills and competencies of researchers are increasingly becoming an explicit part of doctoral training. This aspect is given special consideration in the development of new doctoral programmes; – The mentoring programmes of the Federal Programme for Equal Opportunity offered structural courses to improve the necessary skills of young (women) academics.	
TURKEY	–	– The 'Quality Management Standards for HEIs' issued by the Council of Higher Education (YOK). The YOK approved the fields of education and programmes under National Qualifications Framework in January 2011 as part of the Bologna process.	– The Engineering Research Grant Committee funds national scientists to generate information and technology and transform the results into services and/or products for public use in connection with universal developments and national priorities; – The Technology and Innovation Funding Programmes Directorate facilitates cooperation between industry and academia to encourage active involvement in technology development and innovation activities; – Science and Technology Human Resources Coordination Committee encouraging university-industry collaboration.
UNITED KINGDOM	– The Department for Business, Innovation and Skills and the Department for Education (DfE) work closely on the students' qualification agenda to ensure that the needs of the research market are met, the science curriculum is sufficiently challenging and attractive to young people, and that good enrichment and enhancement activities are part of science education in the UK; – The Science Technology Engineering and Mathematics network (STEMNET), a UK-wide organisation, whose purpose is to ensure that all young people, regardless of background, are encouraged to understand the importance of science; – The UK Government asked the Royal Academy of Engineering to develop a diversity programme for	– Centres for Doctoral Training (CDT) and Doctoral Training Centres (DTC); – Industrial Doctorate Centres; – Seven UK Research Councils; – The UK Government has a well-defined and long term skills agenda for researchers; – 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; – The Vitae programme supports knowledge exchange and the development of a strategic agenda to train and support high level researchers to further improve their skills competencies.	– Collaborative Awards in Science and Engineering (CASE) studentships promote collaboration between the research community and the end-users of research; – Innovation Vouchers for SMEs to purchase academic support by employing researchers in the field of technology and innovation; – Knowledge Transfer Partnerships (KTPs): 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.

Country	Attract young people to science and the research profession	Quality of doctoral training and life-long learning	Collaboration between academia and industry
	the engineering industry. The aim of the Academy's Diversity Programme is to increase diversity and improve access to science, engineering and technology (SET) professions; – The Big Bang Fair; – The National Science and Engineering Competition; – Women are also encouraged to pursue a STEM career through the UKRC's Women into Science, Engineering and Construction (WISE) campaign.		

Source: Deloitte, "Researchers' Report 2012"