Supporting Early Career Researchers in Higher Education in Europe: The role of employers and trade unions

Final report

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UNIVERSITIES & COLLEGE EMPLOYERS ASSOCIATION

EFEE THE EUROPEAN FEDERATION OF EDUCATION EMPLOYERS

EUROPEAN TRADE UNION COMMITTEE FOR EDUCATION
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Foreword

Europe's ambitious agenda for economic and social development is critically dependent on the strength of its knowledge economy and the human capital that underpins it. Supporting and developing our next generation of researchers is therefore of fundamental importance if we want to guarantee Europe's competitiveness in a global economy.

While the economic challenges faced by Member States must be addressed, we must not forget that the benefits of higher education and research extend far beyond economic sustainability. The ways in which we understand ourselves and our cultures are underpinned by rigorous academic research and our rich histories would remain uncovered were it not for the talented individuals that commit themselves to a life of inquiry. Much of the life changing technology that we often take for granted is commonly the product of public investment in research as are the breakthroughs in medicine and the solutions to our shared global environmental challenges. These are high-level outcomes, but they begin with talented researchers working alone and in teams, within institutions and across borders. And many of these researchers begin their careers in our higher education institutions. These are the individuals that this report focuses upon.

This project was established by the Working Group on Higher Education of the European Sectoral Social Dialogue in Education with the support of the European Commission. This research project and the conference held in London have demonstrated what can be achieved through collaboration of social partners at European level. More importantly, the project has raised awareness of the challenges facing our early career researchers and many potential solutions to address these issues. The report and the detailed case studies that accompany it are enriched by excellent examples of initiatives taking place at European, national and local level by Governments, universities, employers' associations, trade unions, and researcher associations. We recommend that readers of this report reflect on how these actions might be applicable to their own situation and particularly encourage social partners to explore these examples together.

Great strides have been made in developing the European Research Area (ERA), yet there is still much to be done to enable a balanced circulation of knowledge and talent. The European Charter and Code for Researchers, which were launched in 2005, promote principles and practice in the recruitment, management and development of researchers and it explicitly supports the objectives of the ERA. The social partners commend those institutions that have made a commitment to the Charter and Code, however, we share concerns about the levels of awareness in some Member States and indications from the research that the initiative may have lost momentum in the context of widespread financial challenges. We would like to see Member States and higher education institutions review their level of commitment to the Charter and Code and see more institutions achieve the HR Excellence in Research badge.

We believe that social dialogue regarding researchers, particularly those at their early career stage, has the potential to improve the attractiveness and sustainability of research careers in Europe. Our research has found some examples of the positive role that social dialogue can play in developing solutions to challenges facing our early career researchers, yet in some cases early career researchers

are not covered by collective contracts and forums for the exchange of views between social partners are absent.

We are pleased to present this report which is based on a literature review, six country case studies and feedback from a conference held in London on 21 November 2014. The report concludes with a Joint Declaration on Supporting Early Career Researchers and we trust that this will be of great support for further dialogue in many European countries. It is our hope that dialogue at the European level and the joint declaration will encourage practical national or local measures and reinvigorate the principals set out in the Charter and Code for Researchers. Finally, we would like to thank our EFEE and ETUCE members for their active contribution to this work as well as the interviewees who volunteered their time to the project.

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Executive Summary

Focus of the research project

In 2013 and 2014, the Universities and Colleges Employers Association (UCEA) of the UK, the European Federation of Education Employers (EFEE) and the European Trade Union Committee for Education (ETUCE) worked jointly on the project 'Supporting early career researchers in higher education in Europe: the role of employers and trade unions'. The Ministry of Education and Culture of Cyprus, the Association of Finnish Independent Education Employers (AFIEE) and the Finnish Union of University Researchers and Teachers (FUURT) played an active role in the project.

Through this project, the project partners built further on the evidence collected by the Working Group on Higher Education and Research of the European Sectoral Social Dialogue in Education (ESSDE) on the three focus areas: gender equality; the environment for early career researchers (ECRs); and the mobility of academic staff within Europe. The Working Group identified specific challenges that can relate to ECRs including work/life balance issues, the short-term nature of contracts and related job insecurity, social security rights, and career progression. This project was established, with the support of the European Commission, to understand and address these issues in a more comprehensive way and identify the role that education employers and trade unions can play in this.

This project recognised the European Charter for Researchers' acknowledgement that the research career begins at postgraduate level but, given the focus on social dialogue, the principal target group were employed PhD candidates and postdoctoral researchers defined as the first two stages in the European Framework of Research Careers. The project primarily focused on researchers in higher education, including those with teaching and research contracts and research-only contracts.

Key findings

In order to get insight in the challenges faced by ECRs and to collect examples of good practice on supporting ECRs, a literature research and in-depth interviews in six very diverse European countries (Cyprus, Finland, Germany, Italy, Romania, and the United Kingdom) were conducted. The country visits were arranged in cooperation with EFEE and ETUCE and their members, which identified and facilitated contact with key participants in each country. In most cases interviews were held with representatives from education employers (employers' associations, university leaders and government ministries), trade unions (national officers), research funders and ECRs.

Based on the case studies and literature review several challenges for ECRs have been identified, including: the use of fixed-term contracts and job security issues; workload and job content; career transition stages and ECR expectations; awareness of alternative employment opportunities; geographical and inter-sectoral mobility; and mentoring and the role of line managers. Furthermore it became clear in our research that the level of social dialogue within higher education in the six countries varies significantly; from Cyprus where a formal platform for social dialogue in higher education does not exist to well-developed negotiation and consultation arrangements in Finland, Germany and the UK.

While the research sought to identify the main challenges it was equally important to explore and identify potential solutions to address and overcome the barriers and obstacles to improving the

situation for ECRs. In order to get insight in how ECRs could be supported and to identify the role that education employers and trade unions can play in this, examples of good practice have been collected in the case study countries. These examples were shared and discussed by EFEE and ETUCE members during the ESSDE Working Group 3 meeting on 29 September 2014 and the Final Conference of the project that took place on 21 November 2014 in London. Based on the research and the input of members, the UCEA researchers drafted recommendations for supporting ECRs in higher education in Europe, with a particular focus on employability, gender equality and mobility. The manner in which the recommendations for improvement are applicable in each Member State will however vary, considering the wide variation in higher education systems and the complexity of research and higher education policy and practice across Member States. The recommendations may be relevant at national, regional and institutional level depending on the Member State. European policy and action will also benefit from the consideration of these recommendations:

- Tackle job insecurity for ECRs. It was recognised by both the social partners that it is desirable for more ECRs to have long-term job security so that they can develop their careers. It was also recognised, however, that the short-term nature of most research funding creates a major challenge to achieving this.
- Improve the management of career expectations among ECRs. Both social partners agreed that, without major changes in the pattern of investment in higher education and broader understanding of the value of research skills beyond HE institutions, the mismatch of supply and demand for researchers in Europe would continue to create problems of under-employment of PhD-qualified people.
- Improve the line management of ECRs by principal investigators and supervisors. One area of improvement commonly proposed was in the management skills of those who supervise ECRs.
- Improve the possibility of all forms of mobility for ECRs. Our research indicates that mobility for ECRs is multi-faceted and involves geographical mobility (both within and between member states) and sectoral mobility between HE and other sectors. Geographic mobility is a fundamental aspect of the European Research Area (ERA) and important in the development of research careers, but there are some concerns about the balance of mobility between different Member States. 'Virtual mobility', aided by improving technology which can facilitate cross-border collaboration and the development of research networks, was also noted as an additional consideration, although it is complementary to mobility rather than a substitute.
- Address barriers to the progression of female ECRs. Our research indicates that female ECRs face particular challenges in developing a research career, especially where they have family responsibilities.
- Improve the attraction of research careers and ensure manageable workloads. While our research found that in all six countries there was no particular problem in recruiting and retaining ECRs to HE, a need for more flexible working practices to enable work-life balance and career breaks was identified.

- Improve the status and recognition of ECRs. A linked issue to improving the attraction of research careers is the need for greater recognition by institutions of the contribution of ECRs to institutional success.
- Improve the representation of ECR interests at national and/or institutional level. One way in which the status and recognition of ECRs could be achieved is through a stronger collective voice for them.
- Consider the involvement of trade unions in the implementation of the European Charter for Researchers and the European Code of Conduct for the Recruitment of Researchers. Higher education trade unions can play an important role at institutional level in helping to assess the current practice of HEIs against the principles of the Charter and Code and identifying concerns and developing joint solutions.
- Continue European social dialogue on ECRs with a view to monitoring developments in Member States and promoting good practice. The ESSDE Working Group 3 can continue to play an active role in promoting the Charter and Code and supporting the development of other European initiatives in this area.
- Consider establishing platforms for social dialogue about research careers and ECRs where these do not currently exist.
- Trade unions and employers to work in partnership to understand challenges, identify good practice, and improve the evidence base. While good practices in the collection of evidence on the issues regarding ECRs have been identified, there is still work to be done in both the collection and dissemination of robust data on research careers, particularly the career paths of researchers once they leave the higher education sector.

Conclusion

The joint work on 'Supporting early career researchers in Higher Education in Europe' has contributed to the development of mutual trust and support between the employers' organisations and trade unions, respectively members of EFEE and ETUCE, and towards an awareness of the important role that these organisations can play in enhancing the attractiveness of a research career in European Member States.

During our meetings, research interviews, ESSDE Working Groups and Final Conference, it became clear that the dialogue between universities and researchers, between trade unions and employers, between research institutes and their direct community is vital. Fora to share views and evidence are therefore crucial, particularly where formal platforms for social dialogue are not in existence.

The European Social Partners in education therefore drafted an ESSDE Joint Declaration in which they commit themselves to improve understanding about the specific challenges facing ECRs in Europe incorporating the perspectives and roles of trade unions and employers and the potential options for responding to these challenges, to contribute to the European social dialogue between employers' organisations and trade unions in the education sector, and to inform and involve the European institutions as well as other interested stakeholders on their shared point of view on the topic of early career researchers.

1 Introduction

The European Social Dialogue, one of the cornerstones of the European social model, has an essential role in EU policy making and is a significant feature of industrial relations in Europe.[1] The Commission communication on the *Renewed Social Agenda* called upon the Social Partners to make 'full use of the possibilities offered by the European Social Dialogue' and recognises that 'with their knowledge and experience they are best placed to identify changing social realities and have a specific role to play helping to provide responses'.

Evidence collected by the Working Group 3 (Higher Education and Research) of the European Sectoral Social Dialogue in Education indicates specific challenges and barriers facing research staff in EU higher education institutions (HEIs) and has highlighted several successful initiatives that have enabled progress towards the objectives of the European Charter and Code for Researchers[2]. The Group identified specific challenges that can relate to early career researchers (ECRs) including work/life balance issues, the short-term nature of contracts and related job insecurity, social security rights, and career progression. This project was established, with the support of the European Commission, to understand and address these issues in a more comprehensive way and identify the role that employers and trade unions can play in this.

This report presents the important and common issues from the research and identifies several challenges that affect the case study countries in different ways. The final part of the report focuses on the role of the social partners and ECRs with some suggestions on how this important agenda could be taken forward. The six in-depth case studies and a literature review have been published as stand-alone reports and provide a rich accompaniment to this summary report.

2 The Terms of Reference of the Project

This project (EU DGV Project VS/2013/0399) was financed under budget heading 04.03.03.01, Industrial Relations and Social Dialogue.

2.1 Project partners

- Lead applicant - Universities and Colleges Employers Association (UCEA) of the UK;
- Co-applicants - European Federation of Education Employers (EFEE) and European Trade Union Committee for Education (ETUCE);
- Affiliated entities - Association of Finnish Independent Education Employers, Ministry of Education and Culture of Cyprus.

2.2 Aims and objectives of the project

The aim of this research project was to improve expertise in industrial relations in the higher education sector and to promote the exchange of information and experience among EFEE and ETUCE members. More specifically the project's objectives were to:

- Reach a shared understanding, and possibly an ESSDE outcome, about the specific challenges facing ECRs in Europe incorporating the perspectives and roles of trade unions and employers and the available options for responding to these challenges.
- Provide insight to the European Social Partners in Education on what can be done to improve social dialogue on industrial relations and employment relations issues pertaining to ECRs.

[1] COM(2008) 412
[2] http://ec.europa.eu/euraxess/index.cfm/rights/whatIsAResearcher

- Explore where dialogue between national social partners improves support for ECRs.
- Improve awareness of the existing work in the area of ECRs (among others European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (2005), the HR Strategy on Researchers (2008) and the 'HR Excellence in Research logo of the EC', The UNESCO Recommendation (1997), the ETUCE report (2011)) their implementation and benefits in improving research quality through the provision of high quality support for ECRs.
- To understand the trends in the career progression of female researchers, including areas of progress, and identify initiatives that have been successful in improving equality in career progression, particularly those initiatives that provide support to ECRs.
- To produce a set of resources including case studies and practitioner-oriented research and policy guidance to complement the existing research on early career researchers.
- To facilitate peer learning between national social partners in the education sector, especially in the higher education sector; to exchange best practices and learning experiences.
- To contribute to the European social dialogue between employers' organisations and trade unions in the education sector, more specifically to continue the current work of the Working Group 3 on Higher Education & Research and to improve the coordination, functioning and effectiveness of the European Sectoral Social Dialogue for Education.

2.3 The research methodology

The project methodology consisted of four components:

- A literature review of relevant secondary sources.
- Interviews with representatives of the social partners in six EU countries - Cyprus, Finland, Germany, Italy, Romania and the United Kingdom - including employers' organisations and trade unions, Government ministries and other national level bodies where relevant, senior university managers and a sample of ECRs.
- A final conference to share project outcomes and findings and discuss possible topics for an ESSDE declaration.
- A project report plus six country case studies.

The project was led by the research team at UCEA in collaboration with EFEE and ETUCE members. The EFEE secretariat provided administrative support to the project. The project Steering Committee, consisting of both EFEE and ETUCE members, guided the project:

- UCEA - Helen Fairfoul, Chief Executive
- EFEE - Bianka Stege, General Secretary & Sarah Kik, Assistant General Secretary / Project Manager
- ETUCE - Martin Romer, European Director & Alexandra Ruedig-Ironside, Policy Coordinator
- Cyprus - Andreas Papoulas, Senior Education Officer of the Ministry of Education and Culture
- Finland - Nina Pärssinen, Executive Director of the Association of Finnish Independent Education Employers (AFIEE)
- Finland - Riku Matilainen, Manager International Affairs of the Finnish Union of University Researchers and Teachers (FUURT)

The UCEA research team consisted of Professor Geoff White (Senior Research Advisor, UCEA and Project Director), Laurence Hopkins (Head of Research, UCEA and Project Leader), Hayfa Mohdzaini (Research Officer, UCEA) and Jon Boys (Research Assistant, UCEA).

3 The case studies

It is testament to the relationships that EFEE and ETUCE have with their members that this project was able to access high-level interviewees in a diverse range of countries including three of the largest economies in Europe – Italy, Germany and the UK. To balance these we conducted research in three of the smaller countries of the EU – Cyprus, Finland and Romania – which also achieved geographical representation. In total these six countries host 231.3 million of the EU's 507 million inhabitants – or 46% coverage by population. The higher education systems in these countries are as diverse as their geography, language and culture, covering the oldest university in Europe in the University of Bologna in Italy and among the newest universities in Europe in Cyprus, which opened its first university in 1992.

Information for the case studies was compiled through desk-based research and country visits of up to two days in duration. The country visits were arranged in cooperation with EFEE and ETUCE which identified and facilitated contact with key participants in each country. In most cases interviews were held with representatives from employers (employers' associations, university leaders and government ministries), trade unions (national officers), and research funders. We also spoke to ECRs in each country, usually individuals that were active members of a trade union or a research association.

Table 1: Key facts about case study countries

Country	Population 1 January 2014. (Eurostat)	GDP (PPP) per capita $ (2013) World bank	Date of EU membership	Geographic size (square kms)	Number of HEIs
Cyprus	858,000	29,450	2004	9,251	8
Finland	5,415,949	38,251	1995	338,424	38
Germany	80,780,000	43,332	1958	357,168	395*
Italy	60,782,668	34,303	1958	301,338	95
Romania	19,942,642	18,635	2007	238,391	104
United Kingdom	64,308,261	36,197	1973	243,610	165

*Including 220 universities of applied sciences

A significant amount of research has been done on research careers, particularly in higher education, and a focus on the early career stage is common. There is also a great deal of European Commission research as well as 'grey literature' in the form of reports from pan-European associations and professional bodies. To support the monitoring of the European Research Area, the European Commission has funded the MORE2 project which included a pan-European survey of researchers at all stages as well as a review of remuneration levels. What is lacking in the literature that we identified was the role of social dialogue regarding this group or the role that social partners can play in supporting ECRs, or indeed research careers.

4 Economic and policy context

4.1 The Lisbon Strategy and Europe 2020

The Lisbon Strategy, launched in 2000, stated as its primary objective for the EU to 'become the most dynamic and competitive knowledge-based economy in the world by 2010 capable of sustainable economic growth with more and better jobs and greater social cohesion and respect for the environment.' The Strategy was ambitious, with a target to reach a 70% employment rate and a target for 3% of EU GDP to be spent on R&D from a baseline of 1.8%. According to some estimates, achieving this improvement would require an additional one million researchers as well as a further half million to cope with replacement needs. Despite missing the high-level targets, the Lisbon Strategy facilitated fundamental changes in research and innovation in the EU, particularly through the development of the European Research Area (ERA) and the 'Lisbonisation' of EU structural funds to target investment in R&D.

The Europe 2020 Strategy is the successor to the Lisbon Strategy and retains the 3% R&D GDP target.[3] It places particular emphasis on labour market reform, the development of human capital and geographical mobility for making the EU labour force better equipped for change and providing job opportunities. It contains three mutually reinforcing priorities: smart growth (developing an economy based on knowledge and innovation), sustainable growth (promoting a more resource efficient, greener and more competitive economy) and inclusive growth (fostering a high-employment economy delivering social and territorial cohesion).

4.2 The European Research Area

Endorsed at the Lisbon European Council in 2000, the concept of the ERA was based on a diagnosis that highlighted a series of challenges to the effective implementation of the Lisbon strategy including barriers between industry and academe, limited interdisciplinary cooperation, growth in the research capability of emerging economies, fragmentation of research within and between Member states, and the lack of a European policy on research. The Green Paper on the ERA recommended that the following features would be critical to achieving the EU's ambitions in ensuring:

- an adequate flow of competent researchers;
- world-class research infrastructures;
- excellent research institutions ;
- effective knowledge-sharing;
- well-coordinated research programmes and priorities;
- a wide opening of the ERA to the world.

Progress towards the ERA has been described as 'a mixture of successes and areas of underachievement' and it is acknowledged that there is a significant gap between those Member States identified as 'advanced' and those that are 'lagging'.[4] The 2013 ERA Progress Report found that the European research and innovation landscape is 'still fragmented' and that there are still

[3] http://ec.europa.eu/europe2020/index_en.htm

[4] European Commission Directorate-General for Research (2008), 'Challenging Europe's Research: Rationales for the European Research Area (ERA) – Report of the ERA Expert Group'. http://ec.europa.eu/research/era/pdf/eg7-era-rationales-final-report_en.pdf

barriers that prevent Europe from achieving a unified ERA.[5] Conclusions on progress in the ERA, published in February 2014, noted that the new Horizon 2020 programme provides renewed momentum for the ERA and emphasises the importance of the ERA in the context of the 'Innovation Union' and the Europe 2020 strategy for growth and jobs. While the report notes that 'much has already been achieved', it encourages Member States to take 'stronger ownership' of building the ERA by reviewing their existing systems and identifying actions in cooperation with relevant stakeholders. Furthermore, the report recommends that Member States should accelerate national reforms to boost the EU's potential in research, development and innovation. The Council concludes that an ERA roadmap should be developed by 2015 to facilitate and reinforce Member State efforts by providing:

> *A shared understanding of the strategic objectives over the next few years and a set of tools and best practices to support the Member States in developing and implementing their national policies in ways which correspond with their respective specificities and priorities.*

Specifically the roadmap should take into account, inter alia:

- using transparent and merit-based recruitment practices with regard to research positions;
- fostering mobility of researchers between academia and industry;
- stepping up the efforts to systematically mainstream gender equality in research and innovation policies and programmes.

Supporting ECRs and aligning institutional practice to the Charter and Code is thus fundamental to the effective operation of the ERA. The Green Paper on the ERA emphasised that training, attracting and retaining more competent researchers was vital and that their mobility across Europe is more important than for other professions due to specialisation and to facilitate knowledge transfer.[6] However, the Green Paper commented that '*most researchers in Europe still find their opportunities curtailed by institutional and national boundaries, poor working conditions and narrow career prospects*[7]. The 2013 ERA progress report also notes a relative lack of researchers employed in industry in Europe and that even though this situation is improving and doctoral training is diversifying, many PhD graduates are 'ill-prepared for the labour market'.[8] The Green Paper also highlights the under-representation of women in research, particularly in science and engineering, as another major issue.

4.3 The impact of austerity in Europe

The economic environment in Europe continues to be challenging, although there is significant variation in the economic health of the 28 Member States and between the six case studies. The Commission communication *Towards a job-rich recovery* (COM(2012)173), stressed that a sustainable response will require employment policies that generate favourable conditions for job creation,

[5] European Commission (2013), 'European Research Area - Progress Report 2013'. http://ec.europa.eu/research/era/pdf/era_progress_report2013/era_progress_report2013.pdf
[6] European Commission (2007). 'The European Research Area: New Perspectives', Green Paper SEC(2007)412. http://ec.europa.eu/research/era/docs/en/understanding-era-european-commission-eur22840-161-2007-en.pdf
[7] Ibid, p. 12.
[8] European Commission, 2013.

facilitate positive transitions, increase the labour supply and improve its geographic and skills matching with labour market needs. It also reiterated the importance of 'flexicurity'[9].

The economic and political context in our six case studies is a key variable in comparing policies and practices in supporting ECRs. All six countries have been affected by the economic recession but to differing degrees. The economies of Cyprus, Italy and Romania have suffered significant reductions in economic output with Cyprus requiring financial assistance from the EU 'troika'. Cyprus cut all public sector salaries by 8.2% in the first half of 2013 while in Romania public sector salaries were subject to a 25% cut – although this reduction has since been restored following trade union-led legal action. Both of these countries experienced a significant reduction in public funding for higher education as has Italy, where there has been a large reduction in permanent academic staff and a freeze on pay for academic staff (2010 to 2013). The UK has also experienced substantial reductions in public spending although public funding for science and research has been protected in nominal terms to 2014-15. In Finland and Germany, the recession has had a comparatively weaker impact and research funding has continued to be protected. For Finland, which has one of the highest proportions of research investment by GDP, the problem is the changing structure of economy and the risk from a high concentration of public research funding in a few specific areas of research.

Social dialogue has been affected by the crisis with a decrease in the volume of collective bargaining and an increase in the number of agreements not being renewed.[10] A Eurofound report on the impact of the recession on social dialogue also found a high incidence of pay pauses, pay freezes, pay cuts and working time reductions – but also found several good examples of social partners working together to address common challenges. Another Eurofound report on post-recession social dialogue in the public sector notes that there has been increasing pressure on social dialogue arrangements, where they exist, with significant legislative reforms implemented in Romania and a three year contract freeze in Italy.[11]

4.4 Higher education policy

There are also differences in the policy contexts in terms of government policies on higher education. In five of our case studies (Germany, Italy, Finland, Romania and the UK), there have been important reforms to higher education funding and qualification structures in the past six years. In Germany there has been reform of courses in line with the Bologna process, with the replacement of Magister and Diplom qualifications with Bachelor and Master degrees. There has also been a policy to further decentralise higher education policy and finance to the 16 German states. In Italy, new higher education legislation was introduced which included significant changes to the academic career path, while in Finland there was a major change in 2010 when Finnish higher education institutions were given autonomy over decision-making in finance and leadership, leading to change in the employment status of academic staff. In Romania there was substantial reform of doctoral education in 2010 while in the UK there were reforms to higher education funding arrangements which were introduced in 2012-13 and reduced direct state investment in universities in England while increasing undergraduate student fees considerably. These changes are expanded upon in more detail in the individual case studies.

[9] Flexicurity is an integrated strategy for enhancing, at the same time, flexibility and security in the labour market.

[10] Broughton, A. and Weltz, C. (2013), 'Impact of the crisis on industrial relations', Eurofound. http://ilera-europe2013.eu/uploads/paper/attachment/327/tn1301019s.pdf

[11] Lethbridge, J., Greer, I., Kretsons, L., Umney, C. and White, G. (2014), 'Industrial relations in central public administration: Recent trends and features', Eurofound. http://eurofound.europa.eu/sites/default/files/ef_files/docs/eiro/tn1307019s/tn1307019s.pdf

5 Defining early career researchers

The term 'early career researcher' is commonly used in many parts of the world including Australia, Canada, New Zealand, and the USA. In Europe the term is used as well as the term 'early stage researcher', which the European Charter of Researchers defines as researchers in the first four years of their research activity, including the period of research training. Our review of the use of terms found that early career researcher has a less uniform definition and can refer to both the doctoral and postdoctoral stage or, as in the UK, specifically to the postdoctoral stage. However, including doctoral candidates within the scope of the project was important for a number of reasons. Doctoral candidates represent an important link between the European Higher Education Area and the European Research Area as recognised in the Berlin Communique (2003) of the Bologna Process. The Salzburg Principles (2005), which built upon the Berlin Communique, also emphasized the importance of recognising doctoral candidates as professionals and early stage researchers. The recognition of doctoral candidates as research professionals was also emphasized in the Bergen Communique (2005) of the Bologna Process which noted that participants in the 'third cycle' of higher education should be regarded as both students and early stage researchers. Finally, the European Charter for Researchers, which is fundamental to this project, defines the beginning of a research career at post-graduate level:

> *All researchers engaged in a research career should be recognised as professionals and be treated accordingly. This should commence at the beginning of their careers, namely at postgraduate level, and should include all levels, regardless of their classification at national level (e.g. employee, postgraduate student, doctoral candidate, postdoctoral fellow, civil servants).*

The European Framework for Research Careers (EFRC) introduces a fourth term, 'first stage researcher', as one of its four broad profiles, which refers to the point up to the completion of a PhD. Where necessary we have used the first two levels of the EFRC:

- R1 First Stage Researcher (up to the point of PhD)
- R2 Recognised Researcher (PhD holders or equivalent who are not yet fully independent)
- R3 Established Researcher (researchers who have developed a level of independence.)
- R4 Leading Researcher (researchers leading their research area or field)

The Charter's inclusion of the PhD candidate stage does present an issue for the project given the variation in the employment status, or otherwise, of individuals at this stage in the research career which varies across the EU and can vary even within countries. Out of 37 countries participating in the Bologna process, 22 reported a 'mixed' status of doctoral candidates in that there were instances of both employed candidates and those funded by research councils.[12] In some countries, such as the UK, a PhD carries no contract of employment with it and therefore, unless the individual is employed by an HEI in some other capacity, these individuals are not covered by collective agreements. In its 2014 paper on early stage researchers and PhD candidates, ETUCE has recommended that all early stage researchers and PhD candidates should have the status of employees with the social and professional rights of other employees.[13]

[12] EUA (2007), Doctoral programmes in Europe's Universities: Achievements and challenges.
[13] ETUCE (2014), 'ETUCE Policy Paper on Early Stage Researchers/Doctoral Candidates'. Submitted for adoption by the ETUCE Committee to the ETUCE Special Conference, the Regional Special Conference of Education

This project is concerned with employment issues for this group as well as the role of employers and trade unions to address those issues and provide a supportive environment for career development. It was therefore agreed by the steering group that the project should focus primarily on those individuals who work under a contract of employment and hence are covered by collective bargaining and/or legal employment regulation.

This study is confined to those ECRs working in the higher education sector but does not exclude those staff who may have teaching responsibilities – although these will typically be limited at this early stage of the career. While research careers outside of higher education are not within scope, it is clear from our research that the transferability of research talent from higher education to industry and other public institutions is high on the agenda in all case study countries and is an area that requires a high-level of focus in the coming years.

6 Social dialogue arrangements in HE

According to Eurofound social dialogue is definied as "discussions, consultations, negotiations and joint actions involving organisations representing the two sides of industry (employers and workers)".[14] Its report on workplace social dialogue in Europe conceptualises social dialogue as existing along a spectrum between 'downward information provision' and 'employee control' with social dialogue referring to any situation that falls between these two points.

Greater employee influence →

Downward information provision	Two-way communication	Consultation	Negotiation	Employee control
	Social dialogue			

Source: Bryson et al, 2012.

Social dialogue within higher education in the six countries varies significantly from no social dialogue in Cyprus to well-developed negotiation and consultation arrangements in Finland, Germany and the UK – see Table 1. While the dominant forums of social dialogue are joint negotiation and/or consultative committees, either at national or HEI level, there were other mechanisms such as works councils (Finland and Germany[15]) and tripartite arrangements (Romania). In Italy and Romania it was evident that political lobbying by trade unions plays an important role in the policy and legislative process, although this may not typically be classified as social dialogue. Staff representation also varies with multiple unions representing academic staff in Finland, Germany and the UK[16], different union confederations represented by different unions at institutional level in Italy and single union representation in Romania.

International, meeting in Vienna on 26-27 November 2014. http://www.csee-etuce.org/documents/policy-papers/488-etuce-policy-paper-on-early-stage-researchers-doctoral-candidates-2014

[14] Bryson, A., Forth, J. and George, A. (2012), 'Workplace social dialogue in Europe: An analysis of the European Company Survey 2009', Eurofound. Available at: http://eurofound.europa.eu/sites/default/files/ef_files/pubdocs/2012/14/en/2/EF1214EN.pdf

[15] Works councils are not able to negotiate collective agreements, but can reach agreements with individual employers on issues not covered by collective agreements and the application of the collective agreement.

[16] Most academics who are union members are in the University and College Union (UCU) but there are a small number of Scottish HEIs where academic staff who are union members are in the Educational Institute of Scotland (EIS) teaching staff union.

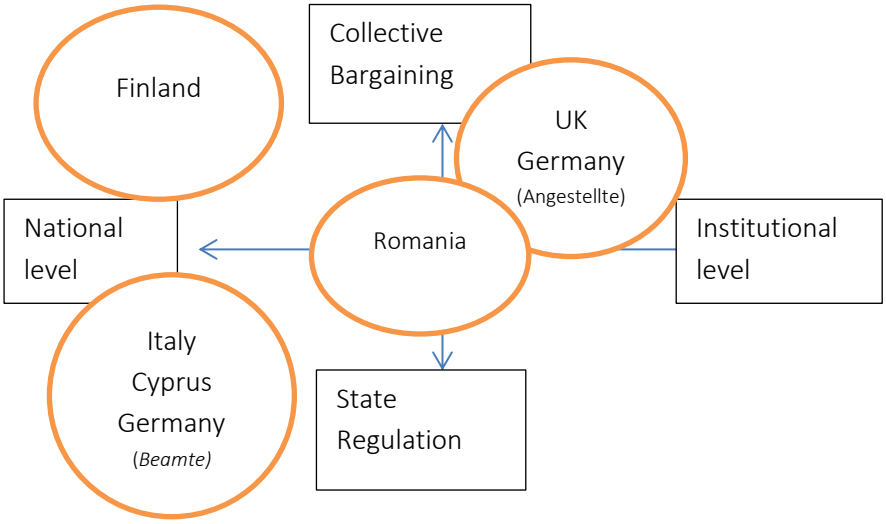
Table 1: Social dialogue in higher education in the case study countries

Country	Social dialogue in higher education	Trade union/s
Cyprus	None. Academic salary levels and employment conditions in Cyprus are fixed by law including appointment salaries, salary increases, minimum salary levels and working time. Professors and Assistant Professors are considered to be civil servants and academic staff have not organised themselves into a trade union.	No academic trade union
Finland	Consultation and negotiation. Since a major change in the status of academic staff in 2010 from civil servant to employee, pay and conditions of employment are now determined through a national level agreement bargained between employers, represented by Association of Finnish Independent Education Employers (AFIEE), and the three HE trade unions. Certain terms and conditions are negotiated at institutional level.	FUURT, FUUP and FUUL
Germany	Contingent. Pay and working conditions are determined according to employee status. A minority of German academics (junior professors and professors) have civil servant (*Beamte*) employment status with pay and conditions determined unilaterally by government since 2003. Other academic staff and researchers are salaried public sector employees (*Angestellte*) covered by collectively bargained agreements at the state level. Works councils can reach agreements with individual employers on issues not covered by collective agreements and the application of the collective agreement.	GEW and ver.di
Italy	Consultation only. Pay, grading and career progression determined by legislation and government regulation. Collective bargaining for support staff within higher education and for all staff in public research institutes.	FLC
Romania	Consultation and negotiation. Appointment salaries and salary increases are set by the government at national level but other terms and conditions are collectively bargained. Improvements to the national agreement can be negotiated at institutional level.	Alma Mater
United Kingdom	Consultation and negotiation. Following the negotiation of the Framework Agreement for the Modernisation of Higher Education Staff, multi-employer negotiations (covering 150 HEIs) primarily cover the uplift to the national pay spine with the majority of other decision-making devolved to HEI level[17]. Local joint negotiation and consultation committees for negotiation and consultation on other aspects of pay and working conditions. There are exceptions to this general description (e.g. those HEIs that do not partake in multi-employer negotiations).	UCU, EIS-ULA

Figure 1 below attempts to illustrate the differences in social dialogue along two axes – the degree to which terms and conditions are subject to collective bargaining between employers and trade unions on the y-axis (similar to the Eurofound spectrum above) and the level at which this negotiation or determination takes place on the x-axis. While the exact placement of each country could be contested, the diagram serves to illustrate the important differences in the way pay and conditions are set in each country.

[17] See Fairfoul, H.; Hopkins, L.; and White, G. (2011) 'Collective Bargaining In United Kingdom Higher Education', *Journal of Collective Bargaining in the Academy*: Vol. 3, Article 3. Available at: http://thekeep.eiu.edu/jcba/vol3/iss1/3

Figure 1: Patterns of Social Dialogue in Higher Education



While the arrangements for social dialogue in higher education in the six case studies typically provide comprehensive frameworks for the employment of academic staff, researchers and employed PhD candidates are not covered in all cases – see Table 1. Hence there are defined avenues for negotiation and consultation for issues concerning ECRs in the UK, Finland and Germany but not in Cyprus, Italy and Romania. In Finland the collective agreement for the sector covers employees from PhD candidates (on employment contracts) upwards and in the UK local institutional agreements usually cover all academic staff, including research fellows and postdoctoral researchers. In Germany, research-only posts (e.g. assistant, staff scientist, senior researcher/research group leaders and research-only professors) have employment contracts but collective bargaining agreements often exclude the pay and conditions of ECRs. Despite being excluded from collective bargaining, a number of universities in Germany have established minimum employment standards for ECRs in relation to contract periods and job content. In Italy, Romania and Cyprus the contractual terms for postdoctoral researchers are left to the discretion of the institutions, and sometimes the employing professor, with minimum salaries stipulated by either regulation or the funding council respectively. The *recercatore* ('Researcher') type A & B in Italy, roughly equivalent to an Assistant Professor but employed on a fixed-term contract, however, are covered by national legislation and regulations.

Table 2: Early career researchers and collective agreements

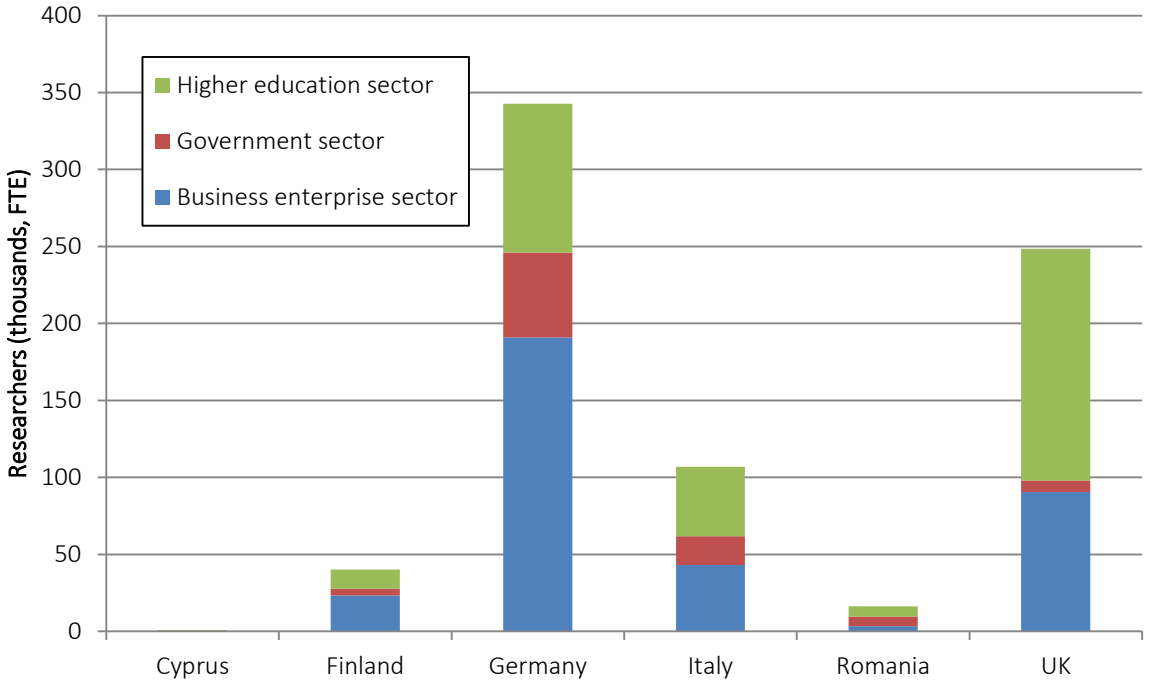
	PhD candidates (R1)	Postdocs / fellows (R2)
Cyprus	PhD candidates are not employees. Receive stipends subject to agreement with professor and department.	The Research Promotion Foundation sets minimum standards for the employment of Research Fellows. Postdoctoral researchers are employed directly by the institution on individual contracts.
Finland	PhD candidates with employment contract are covered by national agreement. Self-funded PhD candidates and those on fellowships are not covered.	Research fellows and other postdoctoral researchers are covered by the national agreement.
Germany	PhD candidates can be either employees or students on a stipend.	Separate collective bargaining agreements exist for different occupational groups but postdocs are often excluded. Some universities have established minimum standards.
Italy	PhDs are not typically employees.	*Assegnisti di ricerca* are employed on individual contracts. Minimum salaries are set by government regulation.
Romania	PhD candidates are students but can be employed separately as teaching or research assistants.	Minimum salaries and terms of employment set by the research funding body.
United Kingdom	PhD candidates do not have an employment contract. Teaching duties are typically paid according to a local agreement.	Postdoctoral researchers are covered by local and national agreements. Research fellows may have additional conditions assigned by the funder.

7 Research careers in higher education and beyond

Within our six countries there are variations in the size, scale of investment and deployment of the research workforce. As can be seen in **Figure 1**, Germany and the UK have, in absolute terms the highest number of researchers in employment, although Finland has the highest number in relative terms (by proportion of full-time equivalent researchers per 1,000 active labour force). There are also significant differences in the balance of the research workforce between the business enterprise, government and higher education sectors in the six countries (see **Figure 1**).[18] In Finland and Germany a much higher proportion of researchers work in industry (58% and 56% respectively) than in the other four countries while Cyprus and the UK have the highest proportion in higher education (67% and 61% respectively). This section primarily focuses on research careers in higher education, but research careers outside HE are covered briefly as this was an area of concern raised by interviewees across all six countries. This topic is also addressed in sections 8.3 'Transitions and managing expectations' and 8.4 'Developing skills for employment within and outside HE'.

[18] The data is drawn from Eurostat which uses the Frascati manual definition of a researcher: "Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods, and systems, and also in the management of the projects concerned. Included are managers and administrators engaged in the planning and management of the scientific and technical aspects of a researcher's work as well as postgraduate students engaged in R&D."

Figure 1: The Research Workforce in the Six Case Study Countries



Source: Eurostat 2014

7.1 HE career frameworks in the case study countries

While the European Framework for Research Careers (see above) provides a useful standard for categorising and comparing research or academic careers according to four stages, our six case studies highlight challenges in this linear model. The academic career path that many ECRs aspire to take is often presented, as in the case of the European Framework for Research Careers, as a series of discrete steps which ultimately end in a professorial position. While the end point in each of the case studies is consistent, the reality of the research career trajectory from PhD candidate to professor is not straightforward.

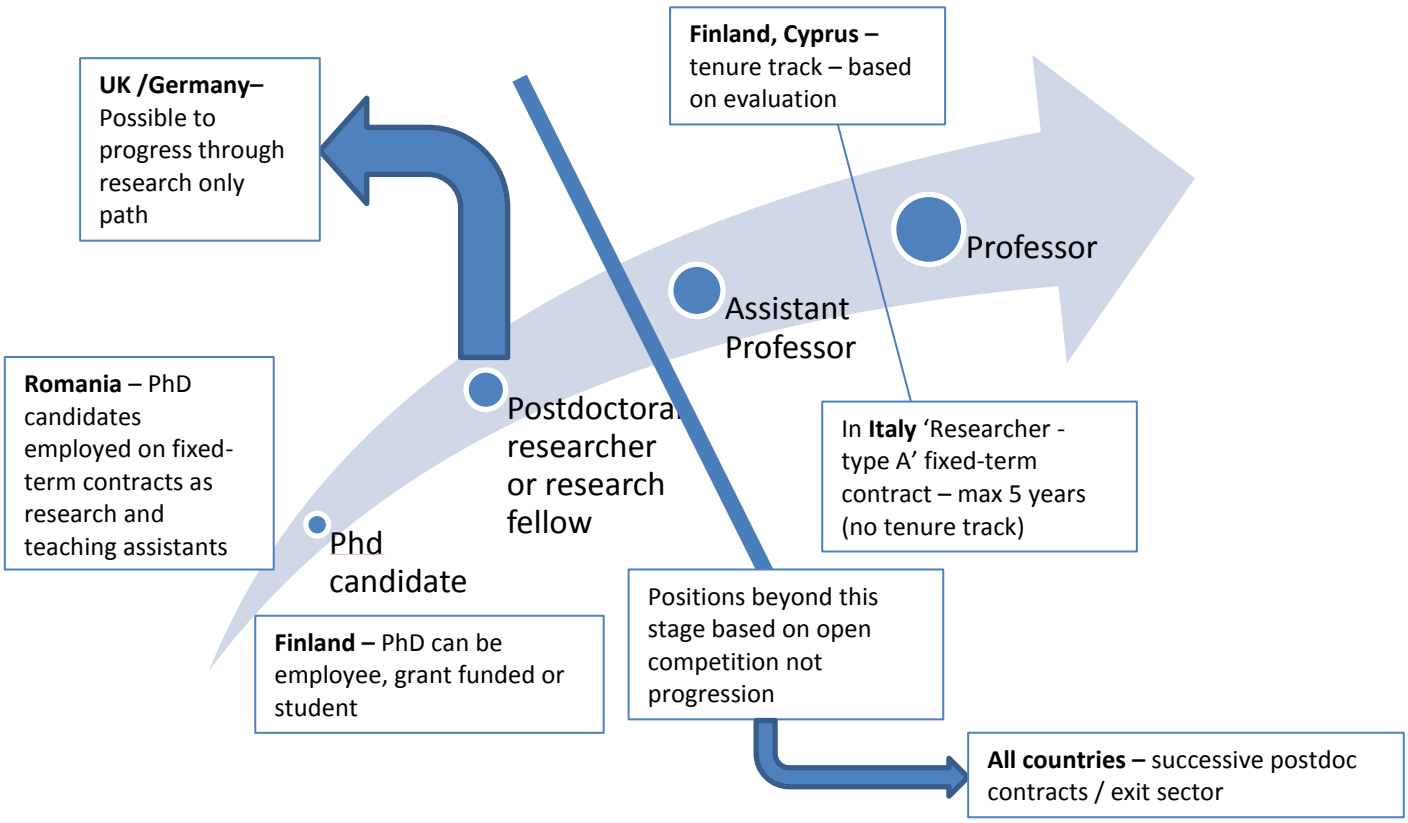
There are significant differences at the first stage where there is a mix of statuses for PhD candidates that can have implications for access to social security and other statutory employment benefits. Movement into the second stage (R2) is consistent across most of the case studies with PhD candidates taking up a postdoctoral research position on an existing research project or becoming a research fellow to undertake their own research. The exception is Germany which is unique in both stage one and two – researchers can be employed for up to 12 years on fixed-term contracts but must pass the 'habitation' to become eligible for a permanent professor post.

Progression from the research fellow / postdoctoral researcher stage to the next stage is significant in several ways. In most of the case study countries it is accompanied typically by a change in contractual arrangements from a fixed-term contract to either an open-ended contract (UK), or a tenure-track position (Cyprus, Finland, Germany and Romania). The exception is Italy where recent reforms have changed this stage from an open-ended contract to either a fixed-term contract with no renewal (type A) or a fixed-term contract with the possibility to move to a tenured associate professorship (type B). In all cases appointment is through open competition rather than promotion.

In Cyprus, Italy and Romania, this will be the first point at which the individual is covered by a collective contract.

The transition from the second stage to the third stage – and therefore out of the 'early career' stage - attracted the most attention and comment from interviewees in the case study countries – particularly the difficulty in achieving this transition. The volume of researchers at stage two significantly outweighs the availability of positions at stage three which means that the ECR needs to leave the sector for an alternative research or research-related career, undertake alternative occupations within the HE sector (e.g. teaching, administration), or continue working on fixed-term contracts within the second stage and continue to compete for limited opportunities. Figure 2 illustrates some of the important differences between the six case study countries and highlights the important barrier between stage R2 and R3.

Figure 2: The HE career path



7.2 The concept of a 'research career' in higher education

In some countries there is no concept of research as a career and talking about research careers in these contexts was, in some cases, met with confusion. It was unclear to some interviewees whether academic careers were considered to be research careers or whether a research career meant a research-only career. In Cyprus and Italy, research-only careers are available in public and private research institutes but within higher education the career path beyond postdoctoral (R2) stage is, with a small number of exceptions, teaching and research. In these countries there are also very few research careers outside of higher education as the majority of industry is comprised of microbusinesses apart from in the north of Italy where high-value industry does provide opportunities for PhD-level researchers. PhDs in these countries are largely viewed by the public as a pre-requisite

for an academic career and not necessarily as a route to other research-intensive career paths. In Cyprus it was emphasised that the wider public, including businesses and politicians, needed to be educated about the need for research and innovation and that the country was only just beginning to establish its own research culture.

In other countries such as the UK, there are possibilities to move through the career structure in research-only positions but this is still not typical and the vast majority of research-only positions in universities are at a level below those equivalent to a senior lecturer or professor at a research-intensive university. Research-only jobs within higher education are also typically fixed-term in nature with some two-thirds of research staff employed under such arrangements.

At the final conference for the project, held on 21 November 2014 in London, a representative from a trade union provided an important reflection on the categorisation of research careers in HE: It was contended that if the European Union wants to prioritise research careers to drive the knowledge economy then there must be the possibility to have a career in research in HE and other sectors and this must not be perceived to be a secondary career to the existing academic teaching and research pathway which remains static in size due to the end of a period of increasing student numbers. Furthermore, it was noted by trade unions in several of the case studies (Italy, Finland, Germany and the UK) that while a researcher on a postdoctoral contract might be termed an 'early career researcher', they may have 10 to 15 years' experience from having worked on successive fixed-term contracts but are still early in their career as there are few realistic progression options in research. Some interviewees also criticised the 'early career researcher' term arguing that within HE there are early career academics or researchers with a limited career path as research-focused careers are only possible within a research institute, the civil service or industry.

7.3 Rigidity and flexibility in academic career pathways

We also found variations in the degree of flexibility in academic careers, especially at the juncture between R2 and R3. In some countries, such as the UK and Finland, there is high mobility between institutions and a genuine labour market exists for academic researchers, with researchers moving between institutions to advance their careers. In others (e.g. Germany and Italy), however, it was reported that rigid academic career structures made upward career mobility and mobility between sectors difficult for ECRs. In Italy it is common for researchers to stay in the institution in which they were research trained for their whole career while the academic trade union says that the new legally defined career structure creates serious obstacles to progression. In Germany researchers may be employed for up to six years as a researcher without a PhD and following the award of a doctorate they must complete an advanced postdoctoral thesis (*habilitation*) to qualify them to *apply* for a permanent professorship. There is no guarantee of such a post and after 12 years, unless a professorial post has been secured, the individual will exit the system. In some cases, researchers will begin a second doctorate to ensure their further employment. The 'early career' stages in Germany can thus last for over a decade.

Until 2010 there were three tenured academic positions in Italian universities – researcher, associate professor and full professor but under the Gelmini Reform a new structure was introduced with only the upper two stages providing tenure. The postdoc stage (*assegnisti de ricerca*) is fixed at four years at which point the individual can apply for a *recercatore tipo* A (researcher type A) contract, which is for three years with the possibility of a two year extension or a *recercatore tipo* B contract which is for

three years with no extension. The type B contract allows the individual to progress to the associate professor position on completion of the '*abilitazione*'. To employ a type B researcher, the university must have the funds to employ the individual as a permanent associate professor from the point of recruitment – this has led to a proliferation of type A positions with a limited number of type B positions being made available.

7.4 Growth in doctoral qualified candidates

There has been significant growth in doctorate qualifications in the EU without a corresponding growth in the academic workforce. According to Eurostat there were 747,267 doctoral candidates in 2012 compared to just over 500,000 in 2006 (an increase of 46%) which is the first year for which equivalent figures are available for comparison.[19] Among the case study countries, excluding Germany for which equivalent figures are not available, there has been a 16% increase in doctoral candidates with significant growth in Cyprus, Italy and Romania – see Table 3. Only in Finland has there been a slight reduction. The level of competition for paid research positions (postdoctoral researchers) and for fellowships is high – for example, when the University of Birmingham (UK) launched its research fellow scheme in 2012-13, it was reported that it received nearly 1,400 applications for 50 posts - In its second year it received 433 applications for only 6 appointments.[20] Interviewees in all six case study countries reported a large mismatch at the next stage between the supply of postdocs, postdoc expectations, and the number of vacancies for academic staff in higher education.

Table 3: Increase in doctoral candidates, 2002 to 2012

Country	2002	2012	Change (%)
Cyprus	79	710	899%
Italy	25,998	34,629	33%
Finland	21,004	20,195	-4%
Romania	18,045*	23,818	32%
United Kingdom	85,073	94,949	12%
Total	**150,120**	**173,591**	**16%**

* *2002 figure for Romania is for 2004. Source: Eurostat, ISCED level 6.*

The PhD was, and in some cases still is, traditionally seen as the training ground for a career in academia, but the rise of the knowledge economy has increased demand for high-level research and analytical skills in the wider economy. But the demand does not always meet the increasing supply in every country, particularly in a challenging economic climate, and the proportion of PhD candidates expecting a career in academia far outweighs the number who will achieve this goal. The MORE2 survey found that between 68% (Germany) and 83% (Croatia) of PhD graduates wanted a research career in academia across a selection of 12 member states. This raises important issues about how the career expectations of ECRs are managed by both higher education employers and the trade unions, to which we return later in the report.

[19] Data is less reliable for years before this but for 16 Member States where data is available (Bulgaria, Czech Republic,

[20] Grove, J. (2014), 'Hundreds of PhD students chasing every early career post', *Times Higher Education*, 6 November 2014. http://www.timeshighereducation.co.uk/news/hundreds-of-phd-students-chasing-every-early-career-post/2016799.article

7.5 Research careers outside HE

There are around 1.59 million full-time equivalent researchers in the EU, of which 45% are in private industry.[21] However, according to the European Commission, the EU is lagging behind its main competitors in the share of researchers in the total labour force and the proportion of researchers working in the private sector is much higher in the USA and Japan – see Table 4.[22]

Table 4: Business sector researchers in the EU, US, Japan and China

Country	Business sector researchers per 1,000 labour force	Business sector researchers as a percentage of all researchers
All EU	2.98	45%
US	7.40	78%
Japan	7.63	74%
China	1.38	62%

Source: Deloitte, 2013.

Often an alternative trajectory for ECRs is to seek employment in publicly-funded research institutes. In some EU member states, a significant amount of research is undertaken in dedicated research institutes, rather than in HE, while in others most funded research takes place in HE. In Romania, for example, there are 49 public research institutes with particular strength in physical sciences while in Italy there are a large number of public and private research centres – indeed many of the private research centres, such as Elettra, have been actively involved in European activity to support researchers. In Germany, the Federal Ministries fund 37 federal R&D institutions which aim to support the ministries' activities and provide the necessary scientific basis for the execution of government measures. The 16 German states (Länder) also act as research funding bodies and operate around 160 research institutes that support state research activities. By contrast, in the UK there has been a reduction in the number of state-funded government research institutes, and hence employment opportunities for ECRs, as part of a general move to reduce public expenditure. In some cases these bodies, or their functions, were privatised while in some other cases they have been transferred to HEIs. Ten government research establishments remain in public ownership (with 20,000 staff) and seven government laboratories remain state operated (with 14,000 staff).

The other major career destination for ECRs, particularly in science and engineering, is private sector R&D. But the opportunities for such private sector research careers vary greatly between the six countries. In Germany there is a strong demand for postdocs in private manufacturing, and we were informed that a PhD was considered a pre-requisite for many jobs in industry, whereas in Italy we were informed that the private sector attaches little value to a doctorate and there is no great demand for R&D researchers in Italian industry outside of certain specialisms such as the automotive industry. Hence alternative career opportunities are limited. In the UK the main academic trade union stated that private sector career opportunities for ECRs are limited by the fact that R&D is concentrated in particular industrial sectors and that overall demand for researchers outside HE is weak, particularly for researchers in humanities and social sciences.

[21] http://ec.europa.eu/euraxess/pdf/research_policies/20130911_Researchers%20Report%202013_FINAL%20REPORT.pdf

[22] http://ec.europa.eu/euraxess/pdf/research_policies/20130911_Researchers%20Report%202013_FINAL%20REPORT.pdf

8 Challenges facing ECRs and examples of support

There are a number of challenges identified for ECRs in the literature review and our case study research identified these along with areas which have received less focus. These include: the use of fixed-term contracts and job security issues; workload and job content; career transition stages and ECR expectations; awareness of alternative employment opportunities; geographical mobility; and mentoring and the role of line managers. According to the MORE2 survey of researchers, a research career in higher education in Europe is perceived to offer high levels of autonomy, intellectual challenge, and a high level of responsibility – see Table 5. However, the survey suggests that HE researchers are less satisfied with pay and benefits, opportunities for advancement, and mobility. Perceptions of job security vary significantly between the early career stages and the final career stage, which is undoubtedly influenced by the tenure system that still operates in many European countries.

Table 5: Degree of satisfaction with different aspects of the current academic position per current career stage (EU27)

Aspects of current academic position	R1	R2	R3	R4	Average
Intellectual challenge	94	92	93	95	93
Job location	90	92	89	89	90
Level of responsibility	89	85	87	93	89
Reputation of employer	91	90	87	87	88
Degree of independence	89	78	87	92	87
Contribution to society	80	81	87	90	85
Dynamism	86	82	84	88	85
Social status	78	78	80	84	80
Job security	62	57	75	89	73
Mobility perspectives	70	65	59	66	64
Opportunities for advancement	66	55	60	67	62
Benefits	54	55	52	53	53
Salary	59	49	52	54	53
Average	**77**	**74**	**76**	**81**	**77**

Source: MORE2 Higher Education Survey (2012).

8.1 Fixed-term contracts and research funding

The impact of fixed-term employment on ECRs is a major concern of the trade unions and is the number one concern of the trade unions regarding this group in the UK, Germany, Finland and Italy. The trade unions report that the lack of job security at this stage affects the ability to plan for the future, both financially and in terms of a family, and can be the cause of stress which affects wellbeing. ECRs might also have chains of employment in different positions, as well as periods of unemployment, with different employment statuses attached. The evidence from the MORE2 study suggests that the use of these arrangements is on the rise in Europe – the survey found that individuals who started their current employment less than five years ago are less often awarded permanent positions than before. As detailed in the study:

> *…it becomes obvious that in total (including all career stages) permanent contracts seem to be much less common for employment which began under less than 5 years ago while fixed term*

contracts, particularly those of two to four years, are more common. This pattern is consistent across all career stages, although is less pronounced at the R4 stage.[23]

The trade unions were not the only interviewees that raised these issues and many employers acknowledged the difficulties at this stage of the career. However, the employers with whom we conducted interviews (represented by Ministries, universities and employers' associations), usually cited the fixed-term and insecure nature of research funding for projects as the main limitation on providing permanent employment in those roles. In the UK, the UCU says that fixed-term funding should not be used as a 'blanket' objective justification for keeping staff, especially researchers, on such contracts. The union points to some institutions that have managed to move most researchers on to open-ended contracts as evidence that short-termism is not inevitable but says that others have not learned from these 'good practice' examples. It points to several local agreements that have been reached with individual HEIs that have moved ECRs on fixed-term contracts on to permanent contracts. At the University of Bristol the local agreement on fixed-term contracts stipulates that such contracts will only be used where:

- the post is a clearly defined training or career development position
- the post is a first research position and the fixed-term is for four years or fewer
- the post is a secondment
- the post requires specialist skills for a limited period or is to accomplish a particular task or project for a limited period
- the appointment is to cover for a staff member who is absent for a limited period (e.g. maternity leave, sick leave) and any other exceptional circumstances.

In addition, 'no fixed-term contract will be awarded for a period longer than four years, other than in exceptional circumstances, and there will be no more than three successive renewals or extensions for periods of one year or less of a fixed-term contract of one year or less, other than in exceptional circumstances'.

Responses to this issue vary across the case study countries from inaction to codes of conduct. In Italy the legislative changes in 2010 were reported to have exacerbated the problem and it was mentioned more than once by interviewees that the European fixed-term work directive had created a system whereby successive contracts never last more than four years as this will avoid the requirement for permanent employment. There is also frustration from both ECRs and trade unions at the use of fixed-term contracts of shorter duration (e.g. 6-12 months) which are continually extended. At the final conference in London, research funded by the Italian academic trade union FLC was presented which showed that the average length of contract within their sample of researchers was less than one year.[24]

There was evidence of approaches to address some of the difficulties that are associated with these contracts, although fundamental differences remain between the positions of the trade unions and

[23] IDEA Consult (2013), 'Support for continued data collection and analysis concerning mobility patterns and career paths of researchers – Final Report MORE2'. Prepared for the European Commission. P. 76. http://ec.europa.eu/euraxess/pdf/research_policies/more2/Final%20report.pdf

[24] Presentation by Dr Emanuele Toscano, 'Challenges facing early career researchers in Italy', 'Supporting early career researchers in Higher Education in Europe - and the role of trade unions', Friday 21 November 2014. http://www.ucea.ac.uk/en/empres/rs/ecr.cfm

the employers that use these arrangements. At institutional level there were examples of bridging funding to enable postdocs between contracts to work on applications for further funding – but these examples were rare. The Postdoc Support Centre at Imperial College London ensures that postdocs understand the nature of their contract from the start and seeks to manage expectations accordingly whilst ensuring that postdocs are equipped with the tools to apply for roles within the sector as well as opportunities outside HE.[25] In Finland employers provide information on all fixed-term contracts to the trade unions twice a year – this is also a common practice in the UK. One of the Finnish trade unions noted that one of the political promises of the HE reform in 2009 was that this would decrease the use of fixed-term contracts, but usage of these contracts since then has not reduced.

In Germany, the GEW union published the Templin Manifesto in 2010 which, among a series of ten demands, calls for 'permanent jobs for permanent tasks'. It then went on to release the Herrschinger Code which lays down recommendations on implementing the Manifesto. Although German legislation allows a series of fixed-term contracts in research roles, the union has challenged this in court on several occasions and has won at least one case. In Hamburg a Code of Conduct was agreed by the social partners that strengthens employment protection for ECRs.

8.2 Workload and job content

Workload and the balance of duties between teaching and research were another common area of concern and comment from interviewees. ECRs are typically focused on their own research or a research project – however, the workload issues are two-fold. First, in Italy for example, we heard that it is common for postdocs to take on several administrative duties from professors which required them to work beyond their contracted hours. Secondly, ECRs are often asked to undertake teaching duties in addition to their contract. In the UK ECRs will typically work at an hourly rate on a separate contract for teaching, demonstration and tutoring, while in Romania there is an expectation that doctoral candidates will undertake 1-2 hours per week teaching as part of their development. Postdocs in Romania are limited to a maximum of 10 hours additional work per week to prevent distraction from core tasks.

The developmental benefit from offering teaching opportunities was noted in several of the case studies and in Cyprus regulations preventing PhDs from teaching have been lifted to allow them to undertake such additional opportunities. However, in Hamburg it was noted with concern that some ECRs are performing what is regarded as a full teaching load for an academic while attempting to complete their thesis.

The key issues are thus how these tasks are balanced in order not to affect the individual's research (which is typically the main basis for successfully moving to the next stage or into a new role) and formal recognition of duties when they are required, including marking and supervision. In this regard there were differences between countries; these ranged from duties not even being recognised as part of the individual's appraisal to countries where postgraduates and postdocs were identified on the faculty webpage as having such duties.

Contractual protections against overwork appear to be helpful but some flexibility is viewed as helpful in order not to limit the development of key skills needed at the next stage of the career. The collective agreement for higher education in Finland states that an ECR should only use 5% (80 hours)

[25] http://www3.imperial.ac.uk/staffdevelopment/postdocs1

of their working time on tasks other than research. In Hamburg the Code of Conduct agreed by the social partners has removed the 50% limit on the amount of time that individual PhD candidates can work. In Cyprus one HEI had adopted a workload management system to monitor the inputs of all academic staff including ECRs, similar to some used in the UK.

High workload at this stage of the career was also noted to impact on work/life balance at a particularly important stage for ECRs who may have childcare responsibilities or want to have children. In most cases this is a burden typically felt by female researchers, but survey evidence from the Eurodoc suggests that male researchers are also affected by the lack of work/life balance for similar reasons.[26]

8.3 Transitions and managing expectations

The transition between each career stage in higher education is challenging, particularly at the early stages of the career. One of the common points raised in our research interviews was the need for PhD candidates to have a higher degree of awareness about the career path ahead of them. In our research we found that there was a general acknowledgement of this issue among both employers and trade unions but evidence of action to manage these expectations is less common. Vitae, the career development organisation for researchers in the UK, views this problem as a major issue for ECRs. According to research by Vitae, it is the ambition of 75% of ECRs to pursue a career in academia and 66% say that they realistically expect to achieve this. The reality is that a far lower proportion will achieve this ambition as the number of permanent posts in HEIs is considerably outnumbered by the supply of PhDs and postdocs in the labour market.

This is not to suggest that all ECRs are reluctant to consider alternative careers, but the feedback from all six countries was that for the majority this is the primary ambition and that, outside of scientific, technological, engineering and mathematical (STEM) subjects, relevant work opportunities are limited. At Imperial College London, which has over 2000 postdocs and research fellows, its Postdoc Development Centre makes clear to staff from the start that 'being a postdoc is not a career' i.e. that very few of them will be employed at Imperial College in the longer term. Imperial College's aim is therefore to ensure that its postdocs and research fellows have the skills and knowledge to achieve long-term employability in a research career, rather than simply in an academic career[27]. The Finnish trade union FUURT runs a seminar for PhD candidates which, inter alia, reinforces the competitiveness of the academic career path.

Of course PhD graduates and postdoctoral researchers successfully move on to a range of other careers in the public and private sector – however, there is a general lack of information about research opportunities and pathways outside of higher education and the publicly-funded research institutes. With the exception of the UK, stakeholders had limited data on the range of career paths taken by PhD graduates following their studies or following the postdoctoral phase. The proportions moving through each stage are often given as an estimate based on experience, as are the sectors and roles that these individuals move to once they leave the sector. This is a significant gap in

[26] Eurodoc (2012), 'Eurodoc Survey I: The first Eurodoc Survey on Doctoral Candidates in Twelve European countries'. http://www.eurodoc.net/projects/completed-projects/eurodoc-survey-i/

[27] Presentation by Dr Liz Elvidge, Postdoc Development Centre, Imperial College London, 'Supporting early career researchers in Higher Education in Europe - and the role of trade unions', Friday 21 November 2014. http://www.ucea.ac.uk/en/empres/rs/ecr.cfm

information and makes it difficult to communicate to PhD candidates and prospective candidates about the reality of careers within academia and the opportunities outside the sector.

8.4 Developing skills for employment within and outside HE

In considering research pathways outside higher education, interviewees expressed concerns about the gap between the world of academia and private industry and suggested this gap needs to be addressed to improve career transitions. According to the MORE2 survey, 23% of PhD candidates and 30% of post-PhD researchers report inter-sectoral mobility of more than 3 months with the vast majority of this taking place in the public sector and not-for-profits.[28] The survey also found that 13% of HE researchers work in a dual position. In Italy, the issue is not just that industry does not appear to value the skills of individuals with PhDs, but also that commercial industry is often viewed with scepticism by ECRs. In Cyprus, Italy and Romania, the lack of demand from public and private sector employers means that highly-skilled individuals with PhDs are leaving to pursue careers elsewhere in Europe and in the USA. According to interviewees, lack of industry experience limits the ability of ECRs to easily access jobs outside of HE. For this reason, training in the skills needed for a wide range of employment opportunities should not just be a feature in the undergraduate stage but also be addressed right through to PhD and postdoctoral stages. ECRs have significant development needs beyond their core research skills and need support in developing a portfolio of skills to ensure employability.

These needs are recognised by the European Commission's Principles for Doctoral Training of which 'exposure to industry and other relevant employment sectors' and 'transferable skills training' are key principles. The Commission uses the term 'industry' in a broad sense, referring to business, government, NGOs, charities and cultural institutions. In Italy, there have been changes to doctoral education in line with the principles to improve links with industry, mobility and the acquisition of transferable skills. Ministerial decree number 45 of 8 February 2013[29] establishes procedures for the accreditation of PhD courses in Italy to improve quality and encourage industry-academia collaboration.[30] There were also several examples at institutional-level where the principles appear to have been put into action. For example, the University of Bologna has seven interdepartmental centres for industrial research which employ 1,600 researchers and are integrated into the regional high-technology network of 45 industrial research laboratories and innovation centres. This model provides excellent opportunities for researchers to gain industry experience within a research environment and also enables small companies to hire researchers to undertake small scale projects to solve discrete problems. Another similar example is a collaborative doctoral programme launched by Confindustria Marche, the lead regional federation of industries, with the University of Camerino and four regional banks that has involved PhD students in collaborative projects between companies and the university. This was part of a MiUR call for doctoral fellowships in topics related to industrial research. The European Commission is taking a similar approach at the next stage with the Research and Innovation Staff Exchange (RISE)[31] which provides for 1-12 month exchange secondments with at least three partners. Another example is the Cittadella Politecnica at the Politecnico di Torino which operates as a hub for innovation and knowledge transfer. The Politecnico also operates an Internship

[28] IDEA Consult, 2013.
[29] DM 94/2013 "*Regolamento recante modalità di accreditamento delle sedi e dei corsi di dottorato e criteri per la istituzione dei corsi di dottorato da parte degli enti accreditati*".
[30] http://attiministeriali.miur.it/anno-2013/febbraio/dm-08022013-(1).aspx
[31] http://ec.europa.eu/research/mariecurieactions/about-msca/actions/rise/index_en.htm

and Job Placement Office for PhD candidates and research fellows to match individuals with opportunities in professional research and assist with transitions to the labour market.

The University of Bucharest in Romania has pushed employability up the agenda at all levels of higher education and is introducing placement schemes and skills development programmes right up to PhD level to improve transferrable skills. At the beginning of most research projects, research staff, particularly ECRs are provided with project management training. In Germany the Shared Professorship Programme at Karlsruhe Institute of Technology offers ECRs the opportunity to work at the university and in a commercial organisation at the same time.

The Researcher Development Framework (RDF) developed by Vitae in 2009, sets out the knowledge, behaviours and attributes of researchers in a structured way that enables researchers to understand the areas where they have existing strengths and where they require further development.[32] The Framework covers four distinct areas: knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement, influence and impact. Many of the skills identified in the RDF are transferrable to other contexts and hence the individual can identify and articulate the range of skills that they possess that will be attractive to other employers.

8.5 Geographical mobility

A key part of the European Research Area concept is greater geographical mobility and synergy between researchers in different member states who can share knowledge, research methodologies and equipment. Our research indicated that the opportunity for geographical mobility was welcomed by all stakeholder groups but it was not without its problems. In particular there was the issue of brain drain in some of our countries (Cyprus, Italy and Romania), with ECRs having to go abroad to develop their careers and brain gain in others (Germany and the UK) who were benefitting from inward mobility of ECRs. Geographical mobility was seen by ECRs as particularly problematic for those with children and especially where both parents are in work.

There are also other country specific issues that inhibit geographic mobility. In Germany, for example, the social security system is more generous than elsewhere in Europe so there are disincentives to moving away. Similarly there were concerns among ECRs that moving to another member state for a period can damage long-term career prospects. For example, in Italy there was a concern that moving out of one's 'home' institution for any time would make re-entry problematic. This was in spite of the general view among their employers that ECRs need to acquire international experience to widen their horizons.

There were also suggestions from interviewees in Italy and Finland that while mobility had the potential to provide valuable career experience and opportunities for development, it did not always translate into reality. In Italy time away from the institution and therefore important academic networks was felt by some interviewees to be detrimental to career progression. This may partly explain what the MORE2 final report called the 'mobility paradox':

[32] https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework

One would expect that mobile researchers would become more 'attractive' to employers, but paradoxically enough, job options in academia as well as progression in remuneration and reputation have tended to decrease for more mobile researchers rather than increase.[33]

8.6 Mentoring and the role of line managers

One of the common issues raised by ECR interviewees, as well as by researcher associations, was the role of the line manager/principal investigator (PI) in mentoring and guiding the ECR. In Finland, the UK and Italy it was reported that the quality of this line management, including the ability to mentor and provide career guidance, was highly variable and can make a large difference in the day-to-day experience of the ECR as well as their ability to navigate a career path. In the UK many institutions provide training for line managers and Vitae provide resources and training for individuals managing other researchers.[34] In the UK the academic trade union UCU also provides guidance to principal investigators on how to manage ECRs.[35] Although there are no formal programmes in Romania, mentoring is a key part of the academic culture and the passage of learning between experienced researchers and ECRs is viewed as a core part of the academic role. Indeed, the Ministry said to us that you cannot just focus on ECRs without understanding their relationship with experienced staff.

8.7 Gender equality

Gender equality issues are well-acknowledged at European level. The Commission's Innovation Union Competitiveness Report 2013 highlights that only 33% of researchers in Europe are women, including just 20% of researchers in industry, despite women comprising 46% of new PhD graduates.[36] The issue is more pronounced in science and engineering where only 35% of PhD graduates are female and just 11% of professors (R4) are female – see Table 6. In 22 countries where data was available, 17 countries reported higher success rates for men in obtaining research funding.[37] Considering that women made up 53% of the tertiary educated workforce in 2010 employed in professional and technical occupations, it is evident that there are structural issues unique to the development of researchers. Indeed, disaggregating representation by level shows an uneven development pipeline:

Table 6: Representation of women in HE by level

	Representation	STEM
Students	55%	31%
Graduates	59%	
PhD students	38%	38%
PhD graduates	46%	31%
Academic staff - Grade C (research fellow/'post-doc')	44%	32%
Academic staff - Grade B (Lecturer/Associate Professor)	37%	23%
Academic staff - Grade A (Professor)	20%	11%

Source: European Commission, 2013.

[33] MORE2 (2013), p. 35.
[34] https://www.vitae.ac.uk/doing-research/leadership-development-for-principal-investigators-pis
[35] Appendix 3 'Advice for principal investigators and supervisors' in UCU (2011), 'The Researchers' Survival Guide', pp. 35-38. http://www.ucu.org.uk/media/pdf/i/l/Res_survival_guide_Oct11.pdf
[36] http://ec.europa.eu/research/innovation-union/pdf/competitiveness_report_2013.pdf
[37] http://ec.europa.eu/research/science-society/document_library/pdf_06/she-figures-2012_en.pdf

The European Commission report, *Mapping the Maze* identifies five general issues affecting women's careers at all levels:

- opaqueness in decision-making
- indirect discrimination from institutional practices (e.g. cognitive errors in assessing merit)
- unconscious gender bias in the assessment of excellence
- negative implications for the content of science itself
- occupational segregation / gendered organisation of work.

This project focused primarily on gender equality at the ECR level and the support in place to improve equality between the sexes in research. There is evidence of ECR specific issues which are typically related to the fact that the timing of the early stage of the career aligns to the period when many individuals are starting families or contemplating this. Eurodoc's survey of PhD staff in 2008 found that there are variations in the way in which contracts are put on hold for maternity both between and within countries.[38] The survey also found that respondents, on average, felt significant pressure to postpone having children in order to progress their career – contrarily the percentage of females saying that this was to a very high extent were highest in countries that typically provide the greatest level of family support (i.e. Sweden, Norway, Finland). A majority of respondents to the survey also reported that they were discouraged from taking parental leave including 81% of those respondents in Sweden. It is also recognised that there are differences between disciplines. For example, the lab-based and field-based nature of STEM disciplines means that flexible working opportunities are reduced relative to other disciplines, particularly at the early stages of the career.

The main issue that was raised in the case study interviews with respect to gender equality was the approach to maternity leave during fixed-term contracts. In Finland the trade union FUURT is concerned about the inconsistent approach taken by HEIs and has raised this with the relevant ombudsman. In most countries there appeared to be policies that provided for extension of the contract for the period of leave but there was also frustration on the side of the trade unions and ECRs that these policies were not followed consistently between and within institutions.

The second issue is the postponement of family or the difficulty in supporting a family during the ECR period. In Italy it was emphasised by an ECR who had undertaken research on researchers in Italy, that it is not only the workload that is the issue but also the fixed-term contracts which do not provide the security needed to establish a family and survey evidence shows that the proportion of researchers who are parents is much lower than for the population as a whole.

Our case studies identified relatively few national initiatives to address gender equality and there were no formal initiatives in Cyprus or Romania at national or institutional level. There were several activities of note within the UK, with the Athena SWAN programme being the most prominent example.[39] This takes the form of a Charter that universities sign up to and then take steps to improve practice that can be recognised with a Bronze, Silver or Gold award at either departmental or institutional level. It began as a scheme focused on women in STEM disciplines but is now being widened to cover all academic disciplines. All interviewees in the UK spoke highly of the programme

[38] Eurodoc, 2012.
[39] http://www.ecu.ac.uk/equality-charter-marks/athena-swan/

and its impact. The programme is not targeted solely at ECRs but two of the principles of the Charter specifically acknowledge challenges at this stage:

- The system of short-term contracts has particularly negative consequences for the retention and progression of women in science, which the organisation recognises
- There are both personal and structural obstacles to women making the transition from PhD into a sustainable academic career in science, which require the active consideration of the organisation[40]

Research Councils UK has also introduced a Statement of Expectations on Equality on Diversity which sets out its expectations of those receiving research funding in terms of promoting and leading on equality and diversity and engaging all staff in the pursuit of these objectives.[41] Vitae also has the 'Every Researcher Counts' programme, which provides resources and case studies to encourage principal investigators and researchers generally to recognise the personal characteristics of individual researchers in the way they are supported and managed.[42] Joint work between trade unions and the employers through the joint negotiating body New JNCHES has also sought to address equality issues such as the gender pay gap. While not focusing on ECRs or research staff specifically, the work has monitored the sector's progress in undertaking equal pay audits through surveys and case studies and published a literature review on the gender pay gap and the factors behind its perpetuation.[43]

Germany has supported several initiatives to improve women's careers in research and science but some of these are no longer active. The Centre of Excellence for Women in Science (CEWS), a think tank founded in 2000 to realise equal opportunities for men and women in science in Germany, administers the TOTAL E-QUALITY seal, which assesses institutional equal opportunity measures, and previously coordinated 'Encouragement to Advance' (2007-08) which provided four-day training seminars to female scientists who do not yet hold a tenured position but hold a PhD. At a broader level the 'Offensive for Equal Opportunities' (2006-2011), was supported by the Council for Science and Humanities (WR), the German Research Foundation (DFG) and the Max Plank Society among others who committed to a significant increase in 'the proportion of women holding senior scientific positions over the coming five years'. Legislation has also recognised the unique challenges faced by female researchers. Under the WissZeitVG Federal Act, female researchers have the option to extend their employment contracts by up to two years for each dependent under 18.[44] The intention is to enable female researchers to continue their careers while providing sufficient time for maternity and childcare.

At the university level, the University of Hamburg has implemented several initiatives to increase the percentage of female researchers who progress up the ranks of academia and open doors to careers in other sectors, for example:

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[40] Op cit.
[41] http://www.rcuk.ac.uk/funding/diversity/
[42] https://www.vitae.ac.uk/doing-research/every-researcher-counts-equality-and-diversity-in-researcher-careers
[43] http://www.ucea.ac.uk/en/empres/paynegs/new-jnches/jw-reports/index.cfm
[44] http://www.dfg.de/en/research_funding/principles_dfg_funding/legal_aspects/fixed_term_temp_contracts/index.html

- Since 2009, each female professor appointed on an indefinite contract will be allocated a female ECR on a one-year fixed-term contract, paid for by the university' central funds.
- PhD and postdoctoral researchers in the university's natural science faculty have the opportunity to attend the Pro Exzellenzia programme, funded by the BWF and European Social Fund. The objective of this programme is to support individuals to progress in academic and non-academic careers through a combination of workshops, coaching, mentoring and networking events.
- Work-life balance interventions have been implemented to ensure that young parents in academia can continue their career and education.
- Women in their final stages of PhD since 2010 can apply for scholarship grants to support their cost of living while they complete their qualifications.
- A Women's Advancement Prize worth €10,000 is available annually to recognise outstanding achievement and to raise the visibility of successful female-led research projects.

In Italy, Article 22 of Law 240/2010 guarantees a full salary for ECRs taking maternity leave. This was incorporated into law based on an initiative of UNICAM following its adoption of the Charter and Code and since 2011 a specific budget of €3.5 million has been hypothecated in the state university budget for these purposes. For PhD candidates, Ministerial Decree 224/99 allows for the suspension of the doctorate for maternity and sickness and compensation is possible for those enrolled in the INPS (only PhD candidates with a scholarship). At institutional levels there are numerous examples of policies and initiatives that promote equal opportunities among male and female researchers. For example, Politecnico Torino takes parental leave into account in the assessment of applications for temporary researchers while UNICAM has reached an agreement with the local municipality to guarantee a number of places for the children of researchers.

9 Implementation of the EU Charter and Code and HR Excellence in Research Award

The European Charter and Code are central to setting common standards in the treatment and recruitment of researchers in Europe. The Charter and Code set out a set of best practice principles in the employment and support of research staff to which HE and research institutions are encouraged to commit themselves. To embed this commitment and turn it into action, the HR Excellence in Research award has been established to identify those institutions that have moved beyond an in principle commitment. The HR Excellence award requires an institutional analysis of how the organisation's practice measures against the principles and the creation of an action plan to address areas that require improvement. The Charter and Code are vitally important to improving support for researchers in HE and increasing transparency in the commitments and policies that are in place within institutions.

The level of endorsement of the Charter and Code varied greatly across the six case studies and, outside of the UK, there was limited implementation of the Human Resources Strategy for Researchers (HRS4R) to achieve the HR Excellence in Research logo – see Table 7. Our research found evidence that the EU Charter and Code has been a key influence on HR practices vis-à-vis researchers,

is a reference in the sector collective agreement in Romania and is referenced in Italian legislation. However, it is apparent that there has been a loss of momentum in some countries on this agenda and, outside of the UK, a low level of formal action through the HR Excellence in Research logo. The reasons for this are likely to be multiple but the priority on financial sustainability following the financial crisis is a key factor. Some trade unions also raised concerns that the Charter and Code were endorsed by university leaders but that there was no evidence that it had led to change at the level of the university. In Germany there was generally low awareness of the Charter and Code which is reflected in the low number of HEIs with HRS4R awards.

Table 7: EU Charter and Code – declarations of endorsement and HRS4R awards

	Declarations of Endorsement C&C	HR Excellence in Research (HRS4R)
Cyprus	13	2
Finland	14	7
Germany	14	1
Italy	66	7
Romania	9	2
United Kingdom	16*	91

* The representative bodies, UUK and GuildHE, signed on behalf of all universities and HE colleges (c. 165) in the UK.

The in-depth case studies identify good examples of diagnostic approaches and action planning, including specific plans for ECRs. For example, universities in Italy have used focus groups and surveys to capture a wide range of views on the current practice as set against the principles of the Charter. In the case of Camerino University, 'special attention' was given to First Stage Researchers in the process while the University of Palermo produced a specific action plan for young researchers[45]. Palermo's survey also helped identify the priority issues for researchers at the university which were[46]:

- Appropriate and attractive conditions and incentives, in terms of salary, for researchers at all stages of their career
- Proper plans for increasing researchers' skills and competence
- The need for measures and internal regulations guarantying researchers adequate training for teaching activities

There was little evidence of trade union involvement in the HRS4R process at universities and this is surprising given the significant focus of the Charter on working conditions. In the UK, the trade unions were involved as one of a number of key stakeholders in establishing the Concordat which has equivalence with the Charter and Code. However, UCU did not officially endorse the Concordat due to its position on the acceptability of fixed-term contracts for research staff.

[45] University of Palermo (2010), 'Human Resource Strategy for the University of Palermo – Young Researchers Strategy Plan'. http://portale.unipa.it/amministrazione/area2/set15/.content/documenti/cartaeuropearicercatori/EN_5_Table_3.pdf

[46] University of Palermo (2010), 'Human Resource Strategy for Researchers Incorporating the Charter & Code'. http://portale.unipa.it/amministrazione/area2/set15/.content/documenti/cartaeuropearicercatori/EN_3_Final_Report_merged.pdf

10 Improving support for ECRs and the attractiveness of research careers in Europe

One issue that became clear in our research from the start was the complexity of both research and higher education policy and practice across the six case studies and that 'one size fits all' solutions would not be applicable. While there have been moves to introduce a more uniform system of higher education in Europe through the Bologna Process, considerable disparities remain in terms of funding systems, qualification regimes, quality control systems and models of academic careers (as well as social dialogue arrangements). The management of academic and research staff in higher education varies considerably with institutional autonomy on workforce matters ranging from high autonomy (UK, Finland) to high government regulation (Cyprus, Italy). As indicated above, there are also considerable differences in the scale of research activity and investment between countries, often due to the overall economic differences between those countries. Finally, it should be added that some of our case study countries are net gainers in terms of the geographical mobility of researchers while others are net losers.

The manner in which our recommendations for improvement could be applicable in each Member State will therefore vary. While some are generic in nature, others will apply more in some countries than others, reflecting the differential progress between member states. These recommendations may be relevant at national, regional and institutional level depending on the Member State. European policy and action will also benefit from the consideration of these recommendations.

- Tackle job insecurity for ECRs. It was recognised by both the social partners that it is desirable for more ECRs to have long-term job security so that they can develop their careers. It was also recognised, however, that the short-term nature of most research funding creates a major challenge to achieving this. Improving job security may therefore depend on establishing more secure research funding systems within both the EU and individual member states. The current competitive model whereby HEIs compete for research funds against each other, or where individuals compete between themselves for grant or foundation funding, was seen by the unions as unproductive and a root cause of job insecurity issues; they suggested that a more cooperative and coordinated approach between institutions, and indeed between member states, might enable better long-term career planning for ECRs. Our research indicated that, despite this challenge, examples of institutions moving towards more permanent positions for ECRs could be found, even within the current funding environment. These examples should be shared more widely across EU member states. In the UK, for example, the proportion of fixed-term contracts has been declining, albeit slowly, partly as a result of local negotiations in institutions between the social partners. In Germany the Hamburg Code is a good example of what can be achieved through social dialogue.

- Improve the management of career expectations among ECRs. Both social partners agreed that, without major changes in the pattern of investment in higher education, the mismatch of supply and demand for researchers in Europe would continue to create problems of under-employment of PhD-qualified people. The particular bottleneck between doctoral candidate/postdoctoral levels and higher level jobs in academia is particularly problematic for ECRs and has been exacerbated under austerity policies. Both employers and unions need to ensure that those entering a doctoral programme understand the limited opportunities for

research careers in HE and are aware of the alternative avenues for employment for those with high level research skills, even if this may entail geographical mobility within Europe. To this end, employers and trade unions should continue to emphasise the importance of high-level skills in the wider labour market and increase understanding among private and public sector employers about the benefits that advanced research skills can bring to industry and public policy.

- Improve the line management of ECRs by principal investigators and supervisors. One area of improvement commonly proposed was in the management skills of those who supervise ECRs. In some countries there have been initiatives by institutions to improve the training of managers and PIs and in the UK we also found that the academic union had produced materials for its members who are PIs and managers. These examples of training initiatives could be more widely disseminated throughout the member states.

- Improve the possibility of all forms of mobility for ECRs. Our research indicates that mobility for ECRs is multi-faceted and involves geographical mobility (both within and between member states), sectoral mobility between HE and other sectors. It is also not without its challenges, not least in terms of the inequality of brain drain and brain gain between member states. While the benefit of mobility and gaining a wide range of experience is important for ECRs' future career aspirations and fundamental to the ERA, the practical implications need greater attention, especially for those with children or other caring responsibilities. There needs to be greater flexibility in the career structures available to ECRs so that they can move more easily back and forth between institutions, sectors and countries. The creation of the single RESAVER portable pension within the EU may help in this respect but there are also important issues relating to the differences in social security benefits between member states that would need to be addressed.

- Address barriers to the progression of female ECRs. Our research indicates that female ECRs face particular challenges in developing a research career, especially where they have family responsibilities. For example, this can make geographical mobility much more difficult for dual-career couples. Nonetheless, we did find examples of initiatives at institutional level to combat gender barriers and discrimination for ECRs and in some cases there have been national initiatives (e.g. Finland, Germany, UK) and initiatives at EU level. The EU Code has been a key influence in improving the prospects of female ECRs but more needs to be done by social partners to address these issues. Dissemination of these good practice examples should be encouraged across members states.

- Improve the attraction of research careers and ensure manageable workloads. While our research found that in all six countries there was no particular problem in recruiting and retaining ECRs to HE, a need for more flexible working practices to enable better work-life balance and career breaks was identified. An adequate level of remuneration is equally important to attract and retain a diverse range of talent. Issues of workload vary between member states but in general there is a need for better management of ECRs' duties, and especially the mix of research and teaching. Again, we found examples of good practice (e.g. limits on the amount of non-research duties) and these examples could be better disseminated within the EU.

- Improve the status and recognition of ECRs. A linked issue to improving the attraction of research careers is the need for greater recognition by institutions and Member States of the contribution of ECRs to institutional and international success. This recognition would involve improving the status of ECRs within their research teams and departments.

- Improve the representation of ECR interests at national and institutional level. One way in which the status and recognition of ECRs could be achieved is through a stronger collective voice for them. In some member states ECRs are organised by trade unions and/or they have organised themselves into research associations but in others there are currently few avenues for them to make their collective voice heard. ETUCE has recognised the problems faced by trade unions in organising these workers and produced a policy paper for the union side. Improving social dialogue for this group of employees would help to identify their particular concerns and aid in finding solutions to these concerns.

- Consider the involvement of trade unions in the implementation of the Charter and Code. Higher education trade unions can play an important role at institutional level in helping to assess the current practice of HEIs against the principles of the Charter and Code and identifying concerns and developing joint solutions.

- Continue European social dialogue on ECRs with a view to monitoring developments in Member States and promoting good practice. The Working Group on Higher Education can continue to play an active role in promoting the Charter and Code and supporting the development of other European initiatives in this area such as the RESAVER pension scheme for researchers.

- Consider establishing platforms for social dialogue about research careers and ECRs where these do not currently exist. This could include the review of the coverage of collective agreements vis-à-vis ECRs, the regular inclusion of ECR issues on the agenda of existing forums, and focused discussions through joint trade union-employer events.

- Trade unions and employers to work in partnership to understand challenges, identify good practice, and improve the evidence base. While good practices in the collection of evidence on the issues regarding ECRs have been identified, there is still work to be done in both the collection and dissemination of robust data on research careers, particularly the career paths of researchers once they leave the higher education sector. The MORE2 survey offers a rich dataset on researchers and further interrogation of this may be beneficial in developing a shared and evidence-based understanding of the employment-related challenges in each Member State. A Europe-wide survey on 'what research staff do next' led by UK organisation Vitae in collaboration with Naturejobs will also provide valuable data.[47] Peer learning from existing approaches such as the Hamburg Code of Conduct can also have an important role in improving practice and appreciating the role that social dialogue can play in improving the conditions for ECRs.

[47] https://www.vitae.ac.uk/impact-and-evaluation/what-do-researchers-do/WDRSDN

11 ESSDE Joint Declaration

The European Social Partners in education, EFEE (European Federation of Education Employers) and the ETUCE (European Trade Union Committee on Education), have worked jointly during the years 2013- 2014 on the project "*Supporting early career researchers in Higher Education in Europe and the role of employers' organisations and trade unions"*. This work is supported by the European Commission through the Social Dialogue and Industrial Relations budget line (EU DGV Project VS/2013/0399).

1. Context setting

Conclusions on progress in the European Research Area[48], published in February 2014, noted that the new Horizon 2020 programme provides renewed momentum for the ERA and emphasises the importance of the ERA in the context of the 'Innovation Union'[49] and the Europe 2020 strategy for growth and jobs. While the report notes that 'much has already been achieved', it encourages Member States to take 'stronger ownership' of building the ERA by reviewing their existing systems and identifying actions in cooperation with relevant stakeholders. Furthermore, the report recommends that Member States should accelerate national reforms to boost the EU's potential in research, development and innovation.

The Green Paper on the ERA (2007) emphasised that training, attracting and retaining more competent researchers was vital and that their mobility across Europe is more important than for other professions due to specialisation and to facilitate knowledge transfer.[50] Supporting early career research careers and maintaining the attractiveness of the profession is thus fundamental to the effective operation of the ERA. Another key European document concerning the role of higher education and research in its contribution to the economic recovery is the European Commission Communication on 'Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems'[51]. The Communication called for more doctoral candidates and emphasised the need to equip the existing workforce with research skills, and for 'better information on opportunities so that career paths outside academia become a genuine career prospect for early career researchers'. The Communication emphasises that: 'Tackling stereotyping and dismantling the barriers still faced by women in reaching the highest levels in post-graduate education and research … can liberate untapped talent'.

2. Social partners in education - supporting the objectives of the ERA

EFEE and ETUCE are committed to improve the quality of education and research in Europe and as such are keen to make an active contribution to the European Research Area.

We are especially committed to promoting and supporting the ERA initiatives that have been taken at European Commission level to both increase the supply of researchers and to improve support for these workers, with our shared focus on actions being taken within higher education. These include

[48] http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/intm/141120.pdf
[49] http://ec.europa.eu/research/innovation-union/index_en.cfm
[50] http://ec.europa.eu/research/era/pdf/era_gp_final_en.pdf
[51] http://ec.europa.eu/education/library/policy/modernisation_en.pdf

the European Charter for Researchers[52] and the Code of Conduct for the Recruitment of Researchers (2005)[53], the HR Strategy for Researchers (HRS4R)[54] and the HR Excellence in Research logo.

This project has benefitted greatly from a partnership approach and through the networks of EFEE and ETUCE has enabled the collection of a balanced range of reflective and critical perspectives on the topic. Through this joint work, the European Social Partners in education wish to improve knowledge and practice in industrial relations in the higher education and research sector and to promote the exchange of information and experience among EFEE and ETUCE members.

3. Early career researchers in higher education – definition and scope

The term 'early career researcher' (ECR) is widely used in higher education across the world but there is no single accepted definition across the member states of the EU, or even indeed within individual member states. While the four-stage career model outlined in the European Framework for Research Careers provides a useful framework for cross-county comparison and discussion, there are issues about whether all researchers (including those working in public research institutes and the charitable and private sectors) should be included or whether the definition should only relate to higher education academic careers. In this research we have excluded researchers outside of higher education but, as we note in the literature review, much of the previous research on ECRs applies to all researchers, irrespective of where they work.

A second issue concerning the definition of ECRs is whether to focus specifically on those who are solely engaged in research or whether to include those who undertake teaching alongside research. In some countries there is a twin-track career structure whereas in other member states all those engaged as academics are expected to perform both teaching and research. Our research has therefore included both types of career track.

A third definitional issue concerns doctoral candidates and the nature of their status as students and/or employees. In a paper published in 2013[55], ETUCE notes the differing status of doctoral candidates between and within Member States. This has significant implications for social dialogue as collective bargaining may cover only part of this group or no doctoral candidates at all. In the member states where some doctoral candidates have employed status, these individuals have access to social security benefits, while others, including those receiving state-funded stipends, may not have access to such benefits. The lack of coverage in collective agreements also means that discussions between social partners about the working conditions of this group are limited. From the perspective of the PhD candidate the individual may experience a lack of clarity about their status which has implications for the psychological contract. This lack of clarity can continue into employment at the postdoctoral stage with the mutual obligations of the employee and employer.

[52] http://ec.europa.eu/euraxess/index.cfm/rights/europeanCharter
[53] http://ec.europa.eu/euraxess/index.cfm/rights/codeOfConduct
[54] http://ec.europa.eu/euraxess/index.cfm/rights/strategy4Researcher
[55] ETUCE. Recommendations on organising researchers. Adopted by ETUCE Committee on 25 April 2013. http://www.csee-etuce.org/images/attachments/Organising_ResearchersEN.pdf

4. Supporting early career researchers in higher education in Europe

This declaration is addressed to social partners in education representing the Higher Education and Research sector and their national, regional and local members as well as the European Institutions and interested stakeholders at European or national and local level.

The aim of this declaration is threefold, as the European Social Partners in education wish:

- To improve understanding about the specific challenges facing early career researchers in Europe incorporating the perspectives and roles of trade unions and employers and the potential options for responding to these challenges.
- To contribute to the European social dialogue between employers' organisations and trade unions in the education sector, more specifically to continue the current work of the Working Group 3 on Higher Education & Research and to improve the coordination, functioning and effectiveness of the European Sectoral Social Dialogue for Education.
- To inform and involve the European institutions as well as other interested stakeholders on their shared point of view on the topic of early career researchers.

Our literature research and in-depth interviews in six very diverse European countries (Cyprus, Finland, Germany, Italy, Romania, and the United Kingdom) have enabled us to get insights in the challenges faced by early career researchers and the universities in which they work and study.

- The research indicates that there are number of elements that contribute to satisfaction among ECRs. These include: well-designed posts, well-structured career perspectives, strong funding, career development support, advice and support for diverse career pathways and shared responsibility for career development. The balance between the individual's core research and the teaching and administrative duties they are often called upon to perform, and which can be a vital part of career development, was an important area of discussion in each of the case study countries.
- It is acknowledged by trade unions and employers that the prevalence of fixed-term contracts in early career employment can be challenging for researchers, particularly where the individual remains at this stage of their career for a long period of time. Trade unions are particularly concerned about the effects of insecurity on researchers' ability to plan for the future, balance work and family commitments, and the effects that this can have on mental wellbeing. Employers remain constrained in their ability to offer open-ended opportunities for these individuals due to inter alia the fixed-term nature of research funding and, in some cases, the regulations governing the employment and progression of academic staff.
- One of the main issues identified in the literature is the existence of a large 'bottleneck' between early stages in the research career and what may be perceived to be more stable forms of employment. This was also a concern of interviewees in our case studies. According to Eurostat figures, there were 747,267 doctoral candidates in Europe in 2012 – yet the total research workforce in higher education, including those individuals with teaching and research responsibilities, is only around 1.2 to 1.5 million. The EU produced 1.70 doctoral graduates in per 1,000 population aged 25-34 in 2011 compared to 1.75 in the United States and 1.04 in Japan – yet the US and Japan have far higher numbers of researchers in the labour market overall and over 7 business sector researchers per 1,000 labour force compared to

just 3 per 1,000 in the EU. Stakeholders are concerned that without a greater increase in demand for researchers in industry and the wider public sector the current rate of production of PhD graduates will continue to produce underemployment and intense competition at the early career stages in higher education.

- In addition to the generic challenges associated with attracting, developing and retaining high quality research professionals, there is a significant gender dimension. The Commission's Innovation Union Competitiveness Report 2013 highlights that only 33% of researchers in Europe are women, including just 20% of researchers in industry, despite comprising 46% of new PhD graduates. Representation reduces at each stage of the career down to just 20% at the professor (R4) level. A number of issues have been identified in relation to female researchers including the opaqueness in decision-making, indirect discrimination from institutional practices, unconscious gender bias in the assessment of excellence, negative implications for the content of science itself and the occupational segregation/gendered organisation of work. For ECRs there can also be particular problems around career breaks for maternity.
- The European Research Area (ERA) is dependent on a high degree of mobility among researchers in the EU but also mobility and collaborations with researchers and research institutes further afield. However, the use of the term 'mobility' in European public policy needs to accommodate a wider definition of mobility than overseas experience of more than three months. Indeed the ESF advocates four different types of mobility: geographic, inter-sectoral, interdisciplinary and virtual. Interviewees for this study emphasised the importance of gaining international experience and expanding professional networks at the early career stage, but in some cases mobility between higher education and industry was a greater priority. This study identifies a range of good practice in promoting inter-sectoral mobility at the early career stage. Mobility within academic labour markets can also be an issue where rigid career structures persist. Those in the PhD phase cite funding as the main barrier to geographical mobility while personal/family reasons, finding a suitable position and logistical problems are also cited as significant barriers.

EFEE and the ETUCE wish to conclude their joint research work in this field by inviting their member organisations and wider stakeholders to support early career researchers in Higher Education in Europe, particularly inviting them:

1) To promote the employability of early career researchers

We identify a range of potential policies and actions for employers, trade unions and wider stakeholders, including:

- supporting early career researchers in career planning and managing researchers' career expectations;
- greater transparency about the possibilities of research within higher education being a short element within a career that, for many, will extend to other sectors;
- improving awareness of the employability and transversal skills of researchers within higher education and their attractiveness for the wider labour market;
- improving awareness raising of career options for researchers outside universities;
- improving the collection of information on the career paths of PhD graduates both within higher education and outside the sector;
- career guidance on progressing within and outside academia, for example in developing and using transferrable skills and establishing networks.

2) To promote the mobility of early career researchers

We conclude that there is a need for a broad understanding of mobility to incorporate the wider mobility issues, including mobility between research institutions and universities as well as cross-sectoral mobility and mobility within national higher education labour markets. Also that there is a need to recognise that international mobility in research extends beyond the ERA and carries with it a range of issues and concerns for member states regarding 'brain drain' and 'brain gain'.

We identify a range of potential actions for employers, trade unions and wider stakeholders, including:

- addressing a lack of awareness of careers for researchers outside HE institutions;
- prioritising the role of line managers and considering the benefits of mentoring for early career researchers;
- actions, where necessary, to remove legal and other barriers to the application of open, transparent and merit based recruitment of researchers;
- developing strategies to support the career development of researchers in line with the HR Strategy for Researchers (HRS4R);
- improving links between universities, research institutes and industry;
- consideration of more structured programmes to increase mobility – in both directions - between industry and academia.

3) To promote gender equality and equity

We note that the EU Charter and Code has been a key influence on HR practices vis-à-vis researchers particularly in the UK, but our project identified a loss of momentum in some countries on this agenda and a low level of formal action through the HR Excellence in Research logo. Our research identifies good examples of diagnostic approaches and action planning, including specific plans for early career researchers, yet involvement of trade unions as partners in this process is not immediately apparent. We conclude that there are important actions for trade unions and employers in relation to supporting the proliferation of, and adherence to, the principles of the Charter and Code, including:

- filling research positions according to open, transparent and merit based recruitment procedures proportionate to the level of the position in line with the basic principles of the Charter and Code and including non-EU nationals;
- improving efforts to mainstream gender equality and the gender dimension in research and innovation policies and programmes;
- considering representation of ECRs within academic governance structures;
- involving trade unions as a critical stakeholder in the HRS4R process.

We also conclude that there are actions for trade unions and employers in relation to the indirect enablers and obstacles, including:

- the need for flexible working policies to enable researchers to achieve a good life –work balance;
- consideration of the allocation of workload, access to career breaks, etc. as important enablers;
- consideration of how a need to be mobile may impact negatively on career options and choices;
- systems that acknowledge and recognise the contribution of researchers and ensure equity of treatment with other staff;
- sharing national initiatives such as the UK's Athena Swan Charter Mark[56], Researcher Development Framework and Research Councils UK Statement of Expectations on Equality and Diversity[57] and examples of positive outcomes from social dialogue such as the Hamburg Code of Conduct agreed between the Ministry of Education of Hamburg, the University of Hamburg and the trade union GEW in 2013.

[56] http://www.ecu.ac.uk/equality-charter-marks/athena-swan/
[57] http://www.rcuk.ac.uk/RCUK-prod/assets/documents/skills/EqualityStatement.pdf

5. Conclusion

EFEE and ETUCE reaffirm that open learning environments require the leaders of universities and research institutions to play an active role by ensuring a professional working environment and thriving learning community for early career researchers.

Our joint work on "Supporting early career researchers in Higher Education in Europe" has contributed to the development of mutual trust and support between the employers' organisations and trade unions, respectively members of EFEE and ETUCE, and towards an awareness of the important role that these organisations can play in enhancing the attractiveness of a research career in European Member States.

During our meetings, research interviews, working groups and conferences, it became clear that the **dialogue** between universities and researchers, between trade unions and employers, between research institutes and their direct community is vital. Fora to share views and evidence are therefore crucial, particularly where formal platforms for social dialogue are not in existence.

The European Social Partners in education therefore commit themselves to actively promote this social dialogue and this declaration at national, regional or local level, respecting national and regional education structures.

At the same time we invite the European Commission to help Member States with the implementation and monitoring of these policies, as they should not remain empty words but go towards concrete national or regional actions.

This declaration has been adopted by the ESSDE Steering Committee on 19 January 2015.

For EFEE

Bianka Stege

General Secretary

For ETUCE

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European Director

The original text is in English.

Final report

Supporting Early Career Researchers in Higher Education in Europe:

The role of employers and trade unions

February 2015

Universities and Colleges Employers Association (UCEA)

European Federation of Education Employers (EFEE)

European Trade Union Committee for Education (ETUCE)

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