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**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL  
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**A Reinforced European Research Area Partnership for Excellence and Growth**

(Text with EEA relevance)

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**1. ERA IN A NEW ECONOMIC AND POLITICAL CONTEXT**

*Improving Europe's research performance to promote growth and job creation*

Knowledge is the currency of the new economy. A world-leading research and innovation capacity, built on a strong public science base, is therefore critical to achieving lasting economic recovery and to securing Europe's position in the emerging global order.

EU inward foreign direct investment (FDI) in R&D is holding up, bucking the trend of a decline in overall inward FDI<sup>1</sup>. But indicators of scientific quality, excellence and impact show a weakening of the EU's global position and an on-going exodus of scientific talent.

The Commission has proposed an increase in the EU R&D budget to EUR80 billion for Horizon 2020 and Member States have committed themselves to the EU target to invest on average 3% of EU GDP in research by 2020. But to maximise the return on this investment, Europe must increase the efficiency, effectiveness and excellence of its public research system.

This is why the **European Research Area (ERA)** is at the heart of the Europe 2020 strategy and its Innovation Union (IU) policy flagship<sup>2</sup> and why the European Council has called for ERA to be completed by 2014<sup>3</sup>. The IU aims to ensure that new knowledge-intensive products and services contribute substantially to growth and jobs, but a genuinely world class science base is crucial to achieving this aim.

A key aim for ERA is also to reduce both brain drain, notably from weaker regions, as well as the wide regional variation in research and innovation performance, aiming at excellence across the Union through smart specialisation.

As with the Commission's proposal for Horizon 2020, all this must all be achieved using rules and procedures which are as simple as possible from the user's point of view.

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<sup>1</sup> 'Internationalisation of business investments in R&D and analysis of their economic impact', forthcoming study for Commission's Research and Innovation DG

<sup>2</sup> COM(2010)546

<sup>3</sup> 'Europe needs a unified research area to attract talent and investment. Remaining gaps must therefore be addressed rapidly and the European Research Area completed by 2014 to create a genuine single market for knowledge, research and innovation' European Council Conclusions Feb 2011; European Council Conclusions Mar 2012

## ***Defining ERA - opening up and connecting EU research systems***

ERA is based on the 27 national research systems of the Member States funded from national tax revenues. These will remain distinct in so far as this benefits the EU and individual Member States, allowing Europe to capitalize on its scientific, cultural and geographical diversity. It is vital that Member States and regions build up their own research systems, based on their own strengths, in line with smart specialisation. However, to achieve a globally competitive ERA for Europe to play a leading role in addressing grand challenges and in which all Member States participate, national systems must be more open to each other and to the world, more inter-connected and more inter-operable.

This will generate both more competition and more cooperation. Competition ensures that funding is allocated to the best researchers and research teams, while co-operation enables the brightest minds to work together to speed up breakthroughs to tackle grand challenges (population ageing, energy security, mobility, environmental degradation etc) and prevents unnecessary duplication of national research and infrastructure investment.

In view of open innovation and the increasingly collaborative nature of science, completing ERA also means realising the 'fifth freedom'<sup>4</sup> - free circulation of researchers and scientific knowledge, including via digital means<sup>5</sup>. The following definition of ERA is based on the Lisbon Treaty<sup>6</sup> and European Council Conclusions: *a unified research area open to the world based on the Internal Market, in which researchers, scientific knowledge and technology circulate freely and through which the Union and its Member States strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges.*

### ***The ERA priorities***

Based on analysis of the strengths and weakness of Europe's research systems<sup>7</sup> and the overall objective of inducing lasting step-changes in Europe's research performance and effectiveness by 2014, the **ERA priorities** are:

- **More effective national research systems** – including increased competition within national borders and sustained or greater investment in research
- **Optimal transnational co-operation and competition** - defining and implementing common research agendas on grand-challenges, raising quality through Europe-wide open competition, and constructing and running effectively key research infrastructures on a pan-European basis
- **An open labour market for researchers** - to ensure the removal of barriers to researcher mobility, training and attractive careers

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<sup>4</sup> European Council Presidency Conclusions 7652/1/08 March 2008

<sup>5</sup> i.e. a seamless online space for the circulation of knowledge and technology – 'digital ERA'

<sup>6</sup> See Article 179 of the Treaty on the Functioning of the European Union

<sup>7</sup> See The *ex-ante* impact assessment, the results of the ERA public consultation <http://ec.europa.eu/research/era/> and the European Research Area Committee opinion 1215/11 Dec 2011

- **Gender equality and gender mainstreaming in research** – to end the waste of talent which we cannot afford and to diversify views and approaches in research and foster excellence
- **Optimal circulation, access to and transfer of scientific knowledge including via digital ERA** - to guarantee access to and uptake of knowledge by all.

Completing ERA will bring efficiency, quality and impact gains and new opportunities for all Member States. It is an opportunity for less well-performing Member States to take responsibility for reforming their research systems, driving a process of smart specialisation, and helping to close the innovation divide. Horizon 2020 and the Structural Funds will support this.

The external dimension is a vital, cross-cutting and integral part of ERA. It will be addressed later in 2012 as part of a separate Communication on a strategic approach to enhancing and focussing EU international cooperation in research and innovation.

### *State of play*

ERA is not starting from scratch. Since 2000, the EU, Member States, other involved countries and stakeholders have made substantial progress.

#### **Examples of progress in building ERA**

Successive **Framework Programmes** have contributed to ERA through direct<sup>8</sup> and indirect action including major **Commission initiatives**:

- the European Research Council involving European wide competition for excellence in frontier research
- ERA-NETs for the coordination of European, national and regional research programmes (e.g. E-Rare co-ordinating about half of rare disease research in Europe)
- Article 185 initiatives which combine EU, national and regional efforts into single European programmes (e.g. the EMRP metrology initiative pooling 44% of EU-wide resources for measurement science)
- Marie Curie Actions which have made mobility possible for over 60,000 researchers

#### **Member State-led initiatives:**

- Moves towards a coordinated policy for research infrastructures e.g. setting up the European Strategy Forum on Research Infrastructures (ESFRI) which has produced the first ever European Roadmap for Research Infrastructures<sup>9</sup> and two European

<sup>8</sup> JRC scientific support to EU policy

<sup>9</sup> [http://ec.europa.eu/research/infrastructures/pdf/esfri-strategy\\_report\\_and\\_roadmap.pdf](http://ec.europa.eu/research/infrastructures/pdf/esfri-strategy_report_and_roadmap.pdf)

research infrastructures awarded<sup>10</sup> European Research Infrastructure Consortium (ERIC<sup>11</sup>) status with many others launched or in the pipeline<sup>12</sup>

- Joint Programming<sup>13</sup> to address grand challenges which is gaining momentum and political commitment – e.g. the Member States' 2010 agreement on guidelines on framework conditions for joint programming in research<sup>14</sup> - a separate case is the European Energy Research Alliance to conduct pan-European research programmes under the SET-Plan<sup>15</sup>
- The 'European Partnership for Researchers'<sup>16</sup> leading to improved research career management in a growing number of institutions – this has promoted take-up of the Commission-proposed European Charter for Researchers & Code of Conduct for the Recruitment of Researchers<sup>17</sup> (the Charter & Code) which some Member States have transposed into their national contexts and created enabling frameworks<sup>18</sup> with notable results
- Joint work on Knowledge Transfer<sup>19</sup> which has helped to ensure that Member States have adopted policies on knowledge dissemination

The Knowledge and Innovation Communities of the **European Institute of Innovation and Technology** are helping to set up pan-European research, innovation and education partnerships - due to be part of Horizon 2020

However, progress has been uneven across the different ERA dimensions and Member States. While research infrastructures, for example, has benefitted from the combination of a strategic body, roadmap and regulation, the implementation of joint programming remains sluggish and optimal levels of competition have not been reached. Also, the variability between more advanced and lagging Member States is particularly notable in knowledge dissemination practices and research career conditions and prospects.

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<sup>10</sup> Survey for Health Ageing and Retirement in Europe <http://www.share-project.org/> and the Common Language Resources and Technology Infrastructure <http://www.clarin.eu/external/> [the European Social Science Survey applied for ERIC Status in March 2012]

<sup>11</sup> [http://ec.europa.eu/research/infrastructures/index\\_en.cfm?pg=eric](http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=eric)

<sup>12</sup> Ten of the 48 ESFRI Roadmap 2010 projects are being implemented e.g. the three biological sciences RIs were launched last year - Analysis and Experimentation on Ecosystems (ANAE), Systems Biology-Europe (ISBE), and EU Microbial Resource Research Infrastructure (MIRRI) [<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/522>] and another 16 could start by the end of 2012 [http://ec.europa.eu/research/infrastructures/index\\_en.cfm?pg=preparatory\\_phase\\_projects](http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=preparatory_phase_projects)

<sup>13</sup> COM(2008)468; see also the JPI Portal: [http://ec.europa.eu/research/era/areas/programming/joint\\_programming\\_en.htm](http://ec.europa.eu/research/era/areas/programming/joint_programming_en.htm)

<sup>14</sup> [http://ec.europa.eu/research/era/docs/en/voluntary\\_guidelines.pdf](http://ec.europa.eu/research/era/docs/en/voluntary_guidelines.pdf) welcomed by Council Conclusions 17166/10 Nov 2010

<sup>15</sup> [www.eera-set.eu](http://www.eera-set.eu) ; COM(2007)723

<sup>16</sup> COM(2008)317 & Council Conclusions 13671/08 Sept 2008

<sup>17</sup> European Commission Recommendation to the Member States C(2005)576 - the Charter provides a framework for the career management of researchers; the Code promotes open and transparent recruitment and appraisal procedures

<sup>18</sup> E.g. the three year implementation review of the UK's Concordat <http://www.vitae.ac.uk/> March 2012

<sup>19</sup> based on the Commission Recommendation on the management of intellectual property in knowledge transfer activities and a Code of Practice for universities and public research organisations C(2008)1329

## 2. A PRAGMATIC APPROACH TO COMPLETING ERA BY 2014 – RESPONSIBILITY AND ACTION

Given the time constraints, the most effective and pragmatic approach to meeting the 2014 deadline is a **reinforced ERA partnership** - deeper, wider and more efficient than to date - between **Member States**, the **Commission** and **research stakeholder organisations**<sup>20</sup>. This means complementing the **primary ERA partnership** between the Member States and the Commission by systematically involving stakeholder organisations, such as Science Europe (which brings together research funding and performing organisations) where appropriate.

The explicit role for research stakeholder organisations is new and important. It is consistent with their wishes, the ERA public consultation response and repeated calls by the Council<sup>21</sup>. It builds on previous stakeholder initiatives such as the ERA roadmap produced by the European Science Foundation (ESF)/ European Association of the Heads of Research Funding and Research Performing Organisations (EUROHORCs)<sup>22</sup> and a series of informal tri-lateral symposia<sup>23</sup> involving high-level representatives of Member States, research funding organisations and the Commission organised by EUROHORCs and continued by Science Europe.

The approach focuses on key priorities and is responsibility-based and action-oriented with the onus on all parties to deliver concrete improvements to the EU research system within the remit of their competencies.

The reforms and actions to be implemented by 2014 for each **priority** are set out below:

### 2.1. More effective national research systems

Open national-level competition is crucial to deriving maximum value from public money invested in research. Best-practice performance in this respect which all Member States should attain involves:

- Allocating funding through open calls for proposals, evaluated by panels of leading independent domestic and non-domestic experts (peer review<sup>24</sup>) - this incites researchers to reach internationally-competitive levels of performance
- Assessing the quality of research-performing organisations and teams and their outputs as a basis for institutional funding decisions - peer review can form a part of such assessment and, in the long-term, lead to organisational change

While the balance between these two approaches may vary, they should be at the core of research funding decisions in all Member States in order to overcome divergences in performance across the EU.

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<sup>20</sup> Federative and representative bodies of public and private research actors (including researchers, universities, funding and performing organisations) and their members

<sup>21</sup> Council Conclusions 10231/08 May 2008, 16767/08 Dec 2008, 9956/09 May 2009; Council Resolutions 17159/09 Dec 2009, 10255/10 May 2010

<sup>22</sup> 2009 ESF/EUROHORCs "Vision on a Globally Competitive ERA and their Road Map for Actions"

<sup>23</sup> Lisbon 2009, Zurich 2010, Tartu 2011, Bled 2012

<sup>24</sup> Core principles set out in "voluntary guidelines on framework conditions for joint programming in research", ERAC – GPC, 2010

***Member States are invited to:***

- Introduce or enhance competitive funding through calls for proposals and institutional assessments as the main modes of allocating public funds to research and innovation, introducing legislative reforms if necessary
- Ensure that all public bodies responsible for allocating research funds apply the core principles of international peer review

***The Commission will:***

- Support mutual learning and the exchange of good practice between Member States on the removal of national legal and other barriers to ERA for the priorities set out in this Communication
- Support through the Smart Specialisation Platform Member States and regions in using Structural Funds to develop research capacity and smart specialisation strategies, including support to joint research programmes, in line with Cohesion Policy objectives
- Support ERA Chairs aimed at fostering structural change in institutions to raise their research quality to international levels of excellence

## **2.2. Optimal transnational co-operation and competition**

### ***Jointly addressing grand challenges***

The EU needs to act urgently and coherently to achieve the scale of effort and impact needed to address grand challenges with the limited public research funds available. Strategic Research Agendas developed under the Joint Programming Initiatives show Member State commitment to addressing grand challenges as called for in the 2009 Lund Declaration<sup>25</sup> and by Council<sup>26</sup>. Joint Programming also has the potential for better anchoring co-operation with international partners. But implementation to date falls short. The crux is to enable transnational research and innovation by exploiting synergies between national and international programmes, strategically aligning different sources of national and other funds at EU level rather than cross-border funding *per se*. The level of alignment is presently too low to make a serious impression on big and complex challenges<sup>27</sup>. This is due in part to differences between national funding rules and selection processes, but it is also a question of political will.

Conditions need to be created for all Member States to benefit from strengthened cross-border cooperation and competition through:

- Defining common priorities and joint research agendas, building on the Joint Programming Initiatives and input from strategic forward looking activities

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<sup>25</sup> [http://www.se2009.eu/polopoly\\_fs/1.8460!menu/standard/file/lund\\_declaration\\_final\\_version\\_9\\_july.pdf](http://www.se2009.eu/polopoly_fs/1.8460!menu/standard/file/lund_declaration_final_version_9_july.pdf)  
subscribed to by 350 researchers, funders, business representatives and politicians at the Swedish Presidency's New Worlds New Solutions conference in July 2009 and acknowledged by the Council  
[http://ue.eu.int/uedocs/cms\\_data/docs/pressdata/en/intm/110310.pdf](http://ue.eu.int/uedocs/cms_data/docs/pressdata/en/intm/110310.pdf)

<sup>26</sup> Council Conclusions 16127/09 Dec 2009

<sup>27</sup> Transnational funding amounted to only 0.8% of GBAORD in 2010

- Implementing joint research agendas, when possible, through joint or at least synchronised calls between Member States based on joint international peer reviews delivering comparable scores for all proposals. This would ensure pan-European competition, the benefits of which are already widely acknowledged by Member States (almost all participate frequently in joint ERA-NET calls and some choose to award national funding to researchers on the ERC reserve list for this very reason). It would also pinpoint national strengths and weaknesses in each field across the EU, so helping Member States to decide where to specialise
- Jointly implementing and/or financing calls and projects, building on experience to date and the provisions for Public-Public Partnerships in Horizon 2020. This requires national funding rules to be made compatible and to converge to common European standards.

Joint research agendas should be implemented in cooperation with non-EU countries where relevant and appropriate.

***Member States are invited to:***

- Step up efforts to implement joint research agendas addressing grand challenges, sharing information about activities in agreed priority areas, ensuring that adequate national funding is committed and strategically aligned at European level in these areas and that common *ex post* evaluation is conducted
- Ensure mutual recognition of evaluations that conform to international peer-review standards as a basis for national funding decisions
- Remove legal and other barriers to the cross-border interoperability of national programmes to permit joint financing of actions including cooperation with non-EU countries where relevant

***Research stakeholder organisations are invited to:***

- Agree on common funding principles - eligible costs, reporting requirements, etc. to make national research programmes compatible, interoperable (cross-border) and simpler for researchers
- Further develop and deploy the Lead-Agency, Money-Follows-Cooperation Line, Money-Follows-Researcher and other models for cross-border cooperation
- Pilot the use of synchronised calls with, where possible, single joint international peer review evaluation of proposals as a basis for funding decisions

***The Commission will:***

- Pursue, stimulate and participate in Public-Public Partnerships to address grand challenges as set out in the Communication on Partnering in Research and



Innovation<sup>28</sup> to leverage Member States' contributions and ensure close coordination with relevant activities under Horizon 2020

- On the basis of the information supplied by Member States, map activities in agreed priority areas, with a view to identifying strengths, weaknesses, gaps and duplications
- Support Member States and research funding organisations in implementing joint international peer review evaluations and setting common funding standards - e.g. through an ERA Mark label recognising best practice in cross-border research operations

### ***Effective investment in and use of research infrastructures***

Excellent research depends upon world-class facilities and research infrastructures (RIs), including ICT-based e-infrastructures (eRIs). Such RIs attract talent and stimulate innovation and business opportunities. eRIs in particular enable increasingly prevalent data-intensive collaborative research by geographically dispersed teams - eScience. The challenges are to ensure national commitments to the implementation of the ESFRI Roadmap, achieve maximum value-for-money from investment at all levels, overcome obstacles to construction and operation and ensure open access for researchers to RIs across Europe. The IU includes a commitment to complete or launch construction by 2015 of 60% of the ESFRI roadmap priority RIs of pan-European interest. This requires investment beyond the means of individual countries - pooling of regional, national and European Union funds is thus necessary, particularly for ERIC RIs, including distributed facilities requiring the participation of as many countries as possible with world class national and regional capacity.

Many new European RIs also benefit from international partners or are the European branches of worldwide networks. It is crucial to ensure cost control and management of global projects. The group of twenty major economies (G20) is addressing these issues with the active participation of the Commission.

#### ***Member States are invited to:***

- Confirm financial commitments for the construction and operation of ESFRI, global, national and regional RIs of pan-European interest, particularly when developing national roadmaps and the next Structural Fund programmes
- Remove legal and other barriers to cross-border access to RIs

#### ***The Commission will:***

- Support through Horizon 2020 access to RIs as well as the on-going overall integration of EU RIs particularly those awarded ERIC status
- Encourage Member States to link RI roadmaps to the ESFRI roadmap and smart specialisation strategies in Structural Funds co-financed research and innovation programmes, reinforcing the capacity of less favoured regions to host and participate in RIs of pan-European and international interest

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<sup>28</sup> COM(2011)572

- Support training programmes for the management of such RIs
- Develop in cooperation with ESFRI, e-IRG<sup>29</sup> and other stakeholders a Charter of Access setting out common standards and harmonized access rules and conditions for the use of RIs
- Work with ESFRI to set priorities for implementing the Roadmap and to provide advice and guidance to Member States on overcoming legal, financial or technical obstacles to implementation
- Define with ESFRI, e-IRG and other stakeholders common evaluation principles, impact-assessment criteria and monitoring tools which can be applied in regional, national and European programmes to help combine funds from different sources
- Work with e-IRG to promote the alignment of EU and national approaches to eRI development and use

### 2.3. An open labour market for researchers

While researcher mobility<sup>30</sup> contributes to excellence, several obstacles stand in the way of a genuine European research labour market<sup>31</sup>. One of the most important is the lack of transparent, open and merit-based recruitment<sup>32</sup>, which makes research careers less attractive and hampers mobility, gender equality and research performance.

Giving non-nationals/ non-residents access to national grants and making them portable across borders would make mobility easier<sup>33</sup>. In some cases, legal and administrative barriers prevent this. Initiatives such as 'Money Follows Researcher'<sup>34</sup> show how those barriers can be removed and how Member States and research organisations can organise access to and portability of national grants, while upholding the interests of all parties.

Other obstacles include human resources policies which result in poor career prospects for young researchers, inadequate gender equality practices, social security obstacles and, insufficient academia-business mobility with only one in six researchers in academia having experience in the private sector<sup>35</sup>. Obstacles to the fair recognition of academic diplomas also persist.

#### ***Member States are invited to:***

- Remove legal and other barriers to the application of open, transparent and merit based recruitment of researchers
- Remove legal and other barriers which hamper cross-border access to and portability

<sup>29</sup> e-Infrastructure Reflection Group [www.e-irg.eu](http://www.e-irg.eu)

<sup>30</sup> In the last three years, about 30% of EU researchers have worked abroad for a period of at least three months (EC, 2010)

<sup>31</sup> See also Europe's higher education modernisation agenda COM(2011)567

<sup>32</sup> Commission Expert Group on the Research Profession 2012

<sup>33</sup> ERA SGHRM report on Access to and Portability of Grants 2012

<sup>34</sup> 2009 ESF/EUROHORCs Vision on a Globally Competitive ERA and their Road Map for Actions

<sup>35</sup> ERA SGHRM report on Professional Development of Researchers 2012

of national grants

- Support implementation of the Declaration of Commitment<sup>36</sup> to provide coordinated personalised information and services to researchers through the pan-European EURAXESS<sup>37</sup> network
- Support the setting up and running of structured innovative doctoral training programmes applying the Principles for Innovative Doctoral Training<sup>38</sup>
- Create an enabling framework<sup>39</sup> for the implementation of the HR Strategy for Researchers incorporating the Charter & Code<sup>40</sup>

***Research stakeholder organisations are invited to:***

- Advertise all vacancies on the EURAXESS Jobs portal using the common profiles established in the European Framework for Research Careers<sup>41</sup>
- Fill 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 & Code and including non-EU nationals
- Develop strategies to support the career development of researchers in line with the HR Strategy for Researchers
- Define and implement principles for accessibility to and portability of national grants
- Provide structured doctoral training based on the Principles for Innovative Doctoral Training
- Develop and implement structured programmes to increase mobility between industry and academia<sup>42</sup>
- ***The Commission will:***
- Strengthen collaboration and coordination in the EURAXESS network so that it becomes a means for researchers to access tailor-made assistance
- Support the setting up of a European Accreditation Mechanism for Charter & Code-based human resources management in universities and publicly-funded research

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<sup>36</sup> Through this Declaration EURAXESS Network members acknowledge Euraxess objectives  
<sup>37</sup> This interlinks four activities (Jobs, Services, Rights and Links) devoted to the career development and mobility of researchers <http://ec.europa.eu/euraxess>

<sup>38</sup> COM(2011)567; Council Conclusions 126375 Nov 2011

<sup>39</sup> ERA SGHRM report on Human Resources issues 2012

<sup>40</sup> <http://ec.europa.eu/euraxess/index.cfm/rights/strategy4Researcher>

<sup>41</sup>

[http://ec.europa.eu/euraxess/pdf/research\\_policies/Towards\\_a\\_European\\_Framework\\_for\\_Research\\_Careers\\_final.pdf](http://ec.europa.eu/euraxess/pdf/research_policies/Towards_a_European_Framework_for_Research_Careers_final.pdf)

<sup>42</sup> Akin to Marie Curie 'Industry-Academia Pathways and Partnerships' and its future successor under Horizon 2020

<sup>43</sup> [http://www.ehea.info/Uploads/\(1\)/Bucharest%20Communique%202012.pdf](http://www.ehea.info/Uploads/(1)/Bucharest%20Communique%202012.pdf)

<sup>44</sup> COM(2012)55

institutions

- Support the work of a 'pathfinder group' of countries for the achievement of automatic recognition of comparable degrees<sup>43</sup>
- Take initiatives to address social security barriers for researchers in the EU and further facilitate the entry and stay of third country national researchers by:
  - Clarifying in a Communication EU rules on coordination of social security schemes for groups of workers with a high level of intra-EU mobility, including researchers
  - Resuming work on a pension portability Directive setting minimum standards for the acquisition and preservation of supplementary pension rights<sup>44</sup>
  - Supporting stakeholders in setting up pan-European supplementary pension fund(s) for researchers
  - Reviewing Directive 2005/71/EC on a specific procedure for admitting third country nationals for the purposes of scientific research.

## 2.4. Gender equality and gender mainstreaming in research

In spite of national and EU-level strategies on gender equality, European research still suffers from a considerable loss and inefficient use of highly skilled women. The annual increase in female researchers is less than half the annual number of female PhD graduates and too few women are in leadership positions or involved in decision-making. In 2005 the Council set a goal for women to be in 25% of leading public sector research positions, but in 2009 only 13% of the heads of higher education institutions were women<sup>45</sup>. The integration of a gender dimension into the design, evaluation and implementation of research is also still too limited.

The challenge is to improve on all these points to increase the quality and relevance of research. The Commission is already committed to ensure 40% of the under-represented sex in all its expert groups, panels and committees and will apply this particularly under Horizon 2020.

### *Member States are invited to:*

- Create a legal and policy environment and provide incentives to:
  - remove legal and other barriers to the recruitment, retention and career progression of female researchers while fully complying with EU law on gender equality<sup>46</sup>
  - address gender imbalances in decision making processes
  - strengthen the gender dimension in research programmes
- Engage in partnerships with funding agencies, research organisations and universities to foster cultural and institutional change on gender - charters, performance agreements, awards
- Ensure that at least 40% of the under-represented sex participate in committees involved in recruitment/career progression and in establishing and evaluating

<sup>45</sup> SHE Figures 2009

<sup>46</sup> See Directive 2006/54/EC

research programmes

***Research stakeholder organisations are invited to:***

- Implement institutional change relating to HR management, funding, decision-making and research programmes through Gender Equality Plans which aim to:
  - Conduct impact assessment / audits of procedures and practices to identify gender bias
  - Implement innovative strategies to correct any bias
  - Set targets and monitor progress via indicators

***The Commission will:***

- Foster gender equality and the integration of a gender dimension in Horizon 2020 programmes and projects from inception, through implementation to evaluation, including through the use of incentives
- Propose in 2013 a *Recommendation to Member States* with common guidelines on institutional change to promote gender equality in universities and research institutions.

## **2.5. Optimal circulation, access to and transfer of scientific knowledge**

Research and innovation benefit from scientists, research institutions, businesses and citizens accessing, sharing and using existing scientific knowledge and the possibility to express timely expectations or concerns on such activities. A major challenge is to broadly implement Open Access - i.e. free internet access to and use of publicly-funded scientific publications and data - given the uneven state of advancement of Member State policies in this area. More generally, to increase the economic impact of research, we need to foster Open Innovation, links between research, business and education (the knowledge triangle) as via EIT and in particular knowledge transfer between public research institutions and the private sector while respecting intellectual property rights. As most knowledge creation and transfer uses digital means, all barriers preventing seamless online access to digital research services for collaboration, computing and accessing scientific information (e-Science) and to e-infrastructures must also be removed by promoting a digital ERA. The different types of knowledge transfer, circulation and access should also be judiciously factored into research cooperation with non-EU countries.

***Member States are invited to:***

- Define and coordinate their policies on access to and preservation of scientific information<sup>47</sup>
- Ensure that public research contributes to Open Innovation and foster knowledge transfer between public and private sectors through national knowledge transfer strategies
- Harmonise access and usage policies for research and education-related public e-infrastructures and for associated digital research services enabling consortia of

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<sup>47</sup> The Commission plans to adopt soon a Communication and a Recommendation on this subject

different types of public and private partners

- Adopt and implement national strategies for electronic identity for researchers giving them transnational access to digital research services

***Research stakeholder organisations are invited to:***

- Adopt and implement open access measures for publications and data resulting from publicly funded research
- Implement and promote the uptake of electronic identity and digital research services
- Ensure optimal interaction and linkages and strategic partnering between academia and industry and define joint collaborative research agendas to maximize the use of research results
- Improve recognition and professionalization of knowledge transfer activities and strengthen the role of knowledge transfer offices

***The Commission will:***

- Establish open access to scientific publications as a general principle for all EU funded projects in Horizon 2020. For research data, develop a flexible approach that takes into account different scientific areas and business-related interests
- Continue to fund projects related to open access
- Adopt a Communication and Recommendation to Member States on access to and preservation of scientific information in the digital age
- Propose a roadmap for e-infrastructure development to support e-Science through open access to research tools and resources
- Support activities to raise stakeholder awareness of open access and e-Science
- Develop through assessment of existing initiatives a comprehensive policy approach to Open innovation and knowledge transfer, and consult stakeholders on it.
- Work with stakeholders to develop a set of model consortium agreements to enhance knowledge transfer
- Facilitate a Member State forum for regular exchange and reporting on national developments on the provision, take-up and use of digital research services

**3. CONDITIONS FOR SUCCESS – POLITICAL WILL, RESPONSIBILITY, DELIVERY MODES AND TRANSPARENCY**

***Member States – the primary actors***

Primarily, Member States must make the necessary national reforms and put in place the conditions needed to complete ERA. They must also support implementation of these reforms by facilitating actions which are the responsibility of research funding and performing organisations. Optimal implementation will require both permanent and *ad hoc* working

structures and processes and top-level steering by the Council<sup>48</sup>. This may be partly achieved by adapting existing committees and ERA groups such as ERAC, the main ERA policy advisory body to the Council and the Commission, whose mandate is due to be reviewed by the end of 2012<sup>49</sup>. Member States also need to play a role in monitoring and evaluating progress and in supporting political steering in the context of the annual European Semester cycle.

### ***Research stakeholders - speeding up implementation***

Research stakeholder organisations should take responsibility for the ERA actions addressed to them within the limits of their respective autonomies and jurisdictions as set by national authorities. Relevant research stakeholder organisations will be invited to sign with the Commissioner a Joint Statement in general terms of their willingness to work towards completing ERA. They should also set out the specific ERA actions they will take in terms of timing, deliverables, public reporting on progress, etc. in a Memorandum of Understanding co-signed with the Commission or a unilateral declaration, informing their respective national authorities and the other Partners.

### ***The Commission – increased support***

The Commission will undertake the actions above under its responsibility and on the other actions will support Member States and stakeholder organisations. It will ensure that Horizon 2020 helps to consolidate the completion and functioning of ERA from 2014, supporting ERA-compliant actions relating to researcher careers and mobility, gender, cross-border cooperation, open access, knowledge transfer and infrastructures. It will ensure inclusive ERA policy development by supporting structured dialogue with research stakeholder organisations and relevant civil society bodies - e.g. in the form of a dedicated stakeholder platform.

### ***Transparent monitoring***

The reinforced partnership approach outlined in this Communication does not replace legislation, nor preclude the Commission's right to bring forward legislative proposals based on the new ERA-related provisions in the TFEU. The Commission will therefore develop a robust ERA monitoring mechanism (EMM) based on indicators<sup>50</sup> for all the actions to monitor ERA policy reforms and their implementation, to provide transparency to Council, the European Parliament and the scientific community, and a basis for its own future decisions. The Commission will determine the baseline situation in 2012 using official statistics and results from studies / surveys. The first annual ERA progress report in 2013, which will be transmitted to the Council and the European Parliament, will compare the baseline with actions announced by Member States following this Communication. From 2014, a full assessment of progress will be transmitted to the Council and the European Parliament. If progress is insufficient, different options will be considered, including the legislative options, based on the new provisions in the TFEU, which are set out in the accompanying impact assessment. The monitoring will be done in close connection with the

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<sup>48</sup> The Council may also draw on the annual ERA ministerial conferences, involving associated countries with input from ERAC and the Commission

<sup>49</sup> Council Resolution 10255/10 May 2010

<sup>50</sup> See a tentative list in the Annex to the accompanying Impact Assessment Commission Staff Working Paper - e.g. the share of national public R&D budget allocated to competitive project-based funding as an indicator of national research system effectiveness, or the share of EU-wide research vacancies advertised on Euraxess as an indicator of open recruitment

European Semester, maintaining consistency with other relevant monitoring activities - e.g. for the IU and Horizon 2020