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**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY
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Working Party of National Experts on Science and Technology Indicators

**DEVELOPING AN INTEGRATED INFORMATION SYSTEM ON THE CAREER PATHS AND
MOBILITY FLOWS OF RESEARCHERS**

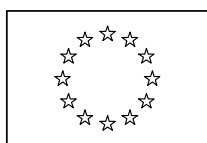
**WORKSHOP ON USER NEEDS FOR INDICATORS ON CAREERS OF DOCTORATE HOLDERS
OECD Paris La Défense, 27 September 2004**

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DEVELOPING AN INTEGRATED INFORMATION SYSTEM ON THE CAREER PATHS AND MOBILITY FLOWS OF RESEARCHERS

1. The political context

1. Europe needs researchers. One of the major policy developments since the beginning of the millennium is the growing perception that the provision of abundant and well trained human resources in research is paramount to the EU's ability to meet its ambitious challenges.

2. This perception was determined by three major political developments:

- The launch of the **European Research Area**, in January 2000, which provides for the first time a general framework for the designing of a global ambition for European research.
- The commitment by the Heads of State and Government, in Lisbon, in March 2000, to **make "Europe the most dynamic and competitive knowledge economy in the world by 2010"**.
- The commitment taken at the European Council in **Barcelona** (March 2001) to **raise the investment in research in the EU to an average of 3 % of the members states' GDP**, two-thirds of which to originate from the private sector.

Within this context I would like to recall that while the number of researchers in the European Union rose slightly from 5.4 per 1,000 workforce in 1999 to 5.7 in 2001, the current level of approximately 6 per 1,000 is well below that of countries that are approaching or have achieved the EU's 3% target. As a comparison, the US employs 8.1 researchers, and Japan 9.1 researchers per every thousand of the workforce¹.

3. As emphasized in the report from the Commission to the Spring European Council of March 2004², the persistence of the **current trend would mean that Europe would be faced with major shortages in highly qualified research staff towards the end of the decade.**

1. Sources: Third European Report on Science and Technology Indicators and Key Figures 2003.

2. COM(2004)29 of 21.01.2004 "Delivering Lisbon; reforms for the enlarged Union".

4. Fighting these trends and fulfilling the ambitious policy objectives cannot therefore be achieved without a **broad and integrated strategy** involving all stakeholders concerned, and taking stock of the changing environment in which research is pursued.

5. The EU's strategy regarding the development of human resources in R&D has, consequently, developed around **three interconnected policy objectives**:

- **Firstly**, to substantially **increase the EU funding** for the training, mobility and career development of researchers (the 'Marie Curie Actions' of the 6th Framework Programme). The overall impact is small in comparison to the 3% objective, but the structuring and political effect is substantial.
- **Secondly**, to **improve the overall environment** for researchers in Europe by enhancing mobility and removing obstacles (the 'Mobility Strategy for the ERA')

First concrete results have been achieved through the implementation of the Mobility Strategy at both Commission and Member States level:

Both ERACAREERS – *the pan-European Researcher's Mobility Portal*³ and ERA-MORE, the *European Network for Mobility Centres* are now fully operational.

On the more administrative side, adopting and implementing the instruments on the **entry conditions** for non-European researchers (the 'scientific visa') is foreseen for 2004.

- **Thirdly**, to **foster career development of researchers**, thereby **enhancing the EU's attractiveness** for research talent from around the world offering better **career perspectives** to researchers is certainly an area where urgent progress is required.

Hence, the persistence of striking differences in the elements which determine a career in research is clearly detrimental in the long run to the EU's overall attractiveness. It has also a negative influence on the social perception of the researcher's profession in Europe.

The different elements which condition the development of careers in research were analysed for the first time at European level in the **Communication: "Researchers in the ERA: one profession multiple careers"** adopted in July 2003. A series of concrete initiatives are proposed in this Communication and the following are now in the process of being developed such as the European Researchers Charter and Code of conduct for the recruitment of researchers.

6. Together, these initiatives form the basis for the emergence of an **overall and integrated EU policy** for Human resources in research. However, slow progress has been noted on the area of data collection. Progressing in the identification of better statistical information, both quantitative and qualitative, is therefore under scrutiny by the member states.

2. What is needed?

7. There is an urgent need to develop a dynamic system for analysing trends on a regular and continuous basis regarding mobility flows, (multiple) career paths of researchers and employment destinations, as well as comparable data on salaries and other tangible benefits.

3. See <http://europa.eu.int/eracareers>

8. Some of the most important policy questions are:

- What are the flows of researchers in Europe from a geographical and intersectorial point of view?
- Which are the career paths of researchers in Europe?
- How many European-born researchers are currently working outside Europe?

9. At present, the **heterogeneity of national data** makes it extremely difficult to draw clear conclusions. Even if there is reasonable evidence stating that there are currently between 110,000 and 120,000 European researchers in the US (new member states included), **reliable and encompassing statistical data remain scarce in quantitative terms, while they are almost completely lacking on the qualitative side**. The situation also **differs considerably from country to country**. One can recall, as an example, the recent declarations by the German federal research minister, Ms. Bulmahn, insisting that there is clear evidence that Germany is not experiencing brain drain.

10. Urgent action in this area needs therefore to be undertaken through means of benchmarking, the development of surveys, indicators and statistics (both through quantitative and qualitative data) and the dissemination thereof.

3. What do we do?

11. Based on a thorough evaluation of existing sources and means, various actions lines have been identified with the aim to improve the current situation. In order to have a clear picture of the situation about mobility of researchers, we need to know both the stock of researchers (where they are) and then their flows (where they go).

12. The stock of foreign-born researchers is currently not well-known but two parallel actions will help:

- **Eurostat** will gradually incorporate incoming researchers from 2006 onwards in the annual R&D data collection.
- Both **Eurostat** and **OECD** are working on a similar project based on the 2000 census, they try to tabulate the stock of scientists and engineers by their nationality and country of origin.

13. Concerning flows (and career paths):

- The Commission has launched a co-operation project with the **Institute for Prospective and Technology Studies (IPTS)**⁴ in Seville, in order to obtain an overview of **global trends** on career paths and mobility of researchers, including geographical and intersectorial mobility. This will be done through the identification of a simulation model which privileges a broad overview about mobility flows of researchers, rather than the systematic collection of data as organised traditionally by national statistics offices, leading to the identification of general trends that can easily be updated.
- The survey on Career of Doctorate Holders (CDH) will ideally complement the above information by studying doctorates holders on more detailed aspects such as employment characteristics of doctorate holders (research/ non-research career, academic/ private/ public

⁴ See <http://www.jrc.es/>

career, link with doctoral speciality, salaries, type of contract, mobility); post-doctoral experience (according to disciplines, difficulties of entering the labour market, number, length, status, characteristics, main provider and funding); international experience and mobility (timing at which it occurs whether during the thesis preparation, post-doctoral position or later; origin and destination of flows, specific to certain discipline or not).

4. What do we want?

1. The commission's directorate responsible for human resources and mobility fully supports the development of the survey on the Careers of Doctorate Holders and will invite member states to join this initiative. We want to cooperate closely with OECD, Eurostat and UNESCO for this project as the objectives of this project is perfectly in line with ours.
2. To this end, we will inform and seek the collaboration at national level from the members of the Steering Group on "Human Resources and Mobility" (which are the representatives of the member states and have the mandate to work together with us to implement the Human Resources and Mobility Strategy within the context of the development of the European Research Area).
3. Finally, information is often available but not comparable at EU level, we hope the structuring effect of this initiative, can be extended to a larger population than the doctorate holders only. In addition, we would be very interested in following the cohort of doctorates at later stages of their careers.