Bundestagsausschuss für Bildung, Forschung und Technikfolgenabschätzung
Öffentliche Anhörung Frauen in der Wissenschaft und Gender in der Forschung

Public hearing on women in academic and research occupations and on gender research

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The European Platform of Women Scientists EPWS has been legally established as an international non-profit organisation in Brussels in November 2005, receiving its seed money as a Specific Support Action under the Sixth EU Framework Programme for Research and Technological Development. The Platform constitutes a new strategic instrument complementing various initiatives taken on the European level to ensure a better participation of women scientists in research and the research policy process as well as the inclusion of the gender dimension in research.

Assessment of the under-representation of women in research in the EU

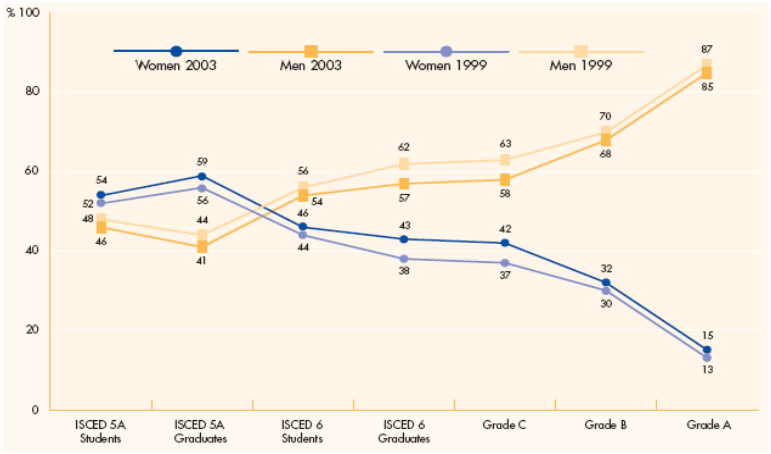
Question A. 4
How do you assess the under-representation of women at the top levels in academic life, research and the management of academic and research institutions:
(a) in its impact on the development of academic and research performance and of facilitating access to higher qualification and appointment levels, and
(b) in its impact on international competitiveness?

The under-representation of women in research and its decision-making bodies in Europe is still significant. Europe is still far away from having gender balance in research and from the Commission's target of 40% women in research decision-making positions. The under-representation of women at the top levels in academic life, furthermore, does not adequately reflect the abilities and scientific excellence of women in research. According to the latest EU statistics, women, although making up more than 50% of EU students and earning 43% of EU doctoral degrees, on average represent only 29% of European researchers and engineers and only hold 15% of senior academic positions. In some countries and in some disciplines, this percentage is even lower. Women also only make up 18% of the scientists in the private sector and, in the majority of the EU member states, represent less than 20% on scientific boards and panels.[1] Europe is failing the potential of highly qualified women scientists.

The participation of women in science and research and in the research policy debate is not only a fundamental human right of women scientists, and therefore a matter of justice. In view of the acknowledged discussion on the value of diversity, it has however also to be seen as essential to achieve excellence and innovation in research and to ensure a sustainable scientific quality of research. Furthermore, failing to make full use of the available qualified human potential of women scientists is detrimental to economies and societies on the macro level as well as to individual research institutions.

[1] European Commission, *Women & Science: Latest Statistics and Indicators – She Figures 2006*

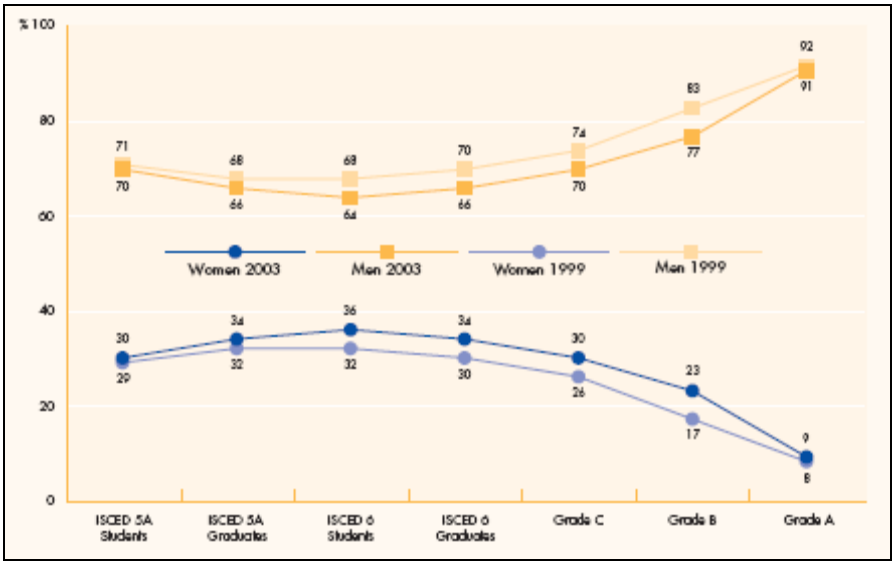
Proportion of women and men in a typical academic career, students and academic staff, EU25, 1999-2003



Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 55

Definition of grades: A: The single highest grade/post at which research is normally conducted; B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders; C: The first grade/post into which a newly qualified PhD graduate would normally be recruited; ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements; ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD)

Proportions of men and women in a typical academic career in science and engineering, students and academic staff, EU-25, 1999-2003



Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 56

Definition of grades: A: The single highest grade/post at which research is normally conducted B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders C: The first grade/post into which a newly qualified PhD (ISCED6) graduate would normally be recruited ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD)

To ensure the production of knowledge that is in the interest of all European citizens, it is of crucial importance that European research takes account of the *gender dimension* and the fact that social differences and inequalities between men and women are very much in existence in our societies. The same holds for policy making: policies that do not address gender run the risk of over generalisation or under differentiation, thereby including or excluding men and women in different and inadvertent ways.

Using the full potential and scientific excellence of women scientists is also key to the realisation of the European Research Area (ERA) and the Lisbon goal of Europe becoming the world's most competitive knowledge-based economy. This is especially true with regard to the European Commission's intention to raise the percentage EU member states should spend on research to 3% of their Gross National Product (GDP). Doing so would require 700 000 additional researchers to carry out work on a thus increased research budget. To ensure and achieve scientific excellence and technological innovation in a thus strengthened research effort, the European Union must significantly increase the number of female researchers among these 700 000 additional researchers.

The insufficient integration of the scientific excellence of highly qualified female researchers is to the detriment of the quality of research performance in Europe and consequently Europe's competitiveness on the international stage.

Obstacles to women scientists

Question A. 5
What are the obstacles confronting women in academic life today? Is it possible to order the various categories of problems ranging from a lack of individual support to structural barriers on the basis of their relative impact?

The factors that lead to the under-representation of women in science and research decision making are multi-fold and often interlinked. Often there is a combination of obstacles at work at any one time which may also mutually reinforce and exponentiate each other.

The most prominent factors which impede women's careers and account for women's under-representation in science and research and in reaching the top decision-making level include: the lack of gender awareness on evaluation and appointment panels, persistent gender stereotypes, predominantly male decision-making bodies, and insufficient network support with respect to women's career advancement. The lack of transparency in recruitment procedures, gate-keeping and the operation of 'old boys networks' to which women often do not have access also still work in the favour of male candidates. Furthermore, the gender pay gap still is a serious issue in all the EU countries and concerns all fields of the employment market, including education, research, universities and especially, however, industrial research.

Often, there is an unintended gender bias in current ways of defining and evaluating scientific excellence which might work to the disadvantage of women. Furthermore, the general insecurity and openness of scientific careers as well as the absence of infrastructures to enable a sustainable work-life balance, though an issue concerning both women and men - together with traditional images of the division of labour in family structures - still has a greater impact on the career development of women. The scarcity of women in senior positions and on scientific committees in the majority of the EU member states may also prevent women's interests from being put forward in policy and decision-making processes on future science development.

Instruments for helping and retaining women in science and research careers

Question B. 8
How can a fairer system of performance assessment be developed for academic and research staff with a view to preventing any sex discrimination in assessment, selection and promotion procedures?

Question C. 3
What instruments for the incorporation of equality factors and gender-related methods into research and teaching do you consider to be worth pursuing?

Key measures addressing the gender imbalance in research and its decision-making bodies include: the promotion of gender mainstreaming; more transparency in recruitment processes; enhanced security of scientific careers; ensuring gender balance in research decision-making bodies, of evaluation panels and of selection committees. Measures also include specific support actions for women researchers, such as mentoring and targeted promotion policies; the strengthening of networking among women scientists at national, regional, and EU level; and raising awareness in the scientific community as well as among policy makers on the issue of equal opportunities in research as well as the promotion of role models to encourage girls into scientific careers.

Next to working towards the European Commission's target to have a minimum of 40% female representation on research panels and consultative committees in the research process, it is of key importance to tackle the lack of gender awareness on decision-making boards and persistent gender stereotyping at all levels of a scientific career with targeted gender-awareness training for those in decision-making positions, sitting on evaluation panels, drafting project proposals and leading contract negotiations.

For any system of performance assessment, its review mechanisms and consequently the way it understands excellence, gender mainstreaming and gender balance are important. The often unintended gender bias in current ways of defining and evaluating scientific excellence needs to be genuinely looked at with a view to seeing how a more open and inclusive, gender-sensitive sense of excellence could be created in improving assessments of scientists.

Excellence cannot be measured directly and unambiguously. No universal and/or neutral system of measuring excellence exists as the definition of excellence is always based on meritocratic principles related to very specific socio-cultural contexts. Who is 'excellent' and what is 'excellence' in science is established through a social (decision) process of various stages – through visible indicators of "quality" (such as publications, social network, behaviour), criteria (such as research agenda, bibliometrics) and procedures (such as gatekeepers, transparency, accountability) - and hence influenced by and dependent on a specific social context. On each of these stages evaluations and decisions take place and different kinds of biases occur, gender bias being one of the most often affecting women researchers. Excellence is a result of the context in which it is evaluated and has to be understood accordingly. As a result, not always the best ideas or the best researchers will succeed in open competition. In consequence, the success of the individual researcher tends to depend on their successful placement in networks, language abilities and non-transparent selection procedures as much as on scientific quality and achievements, possibly contradicting the spirit of creating innovation by excellence. Excellence is thus the result of judgments by individuals, gate keepers, with varying transparency and accountability.

The current system of research funding and performance assessment with its – on EU as well as on national level – increasing focus on allocation of funds through competition and an

understanding of excellence centring on the researcher's track record of publications fulfilling a specific set of criteria seems to advantage an already established group of researchers to which women scientists, highly innovative researchers, researchers from certain disciplines or the margins of disciplines, of diverse ethnic backgrounds or smaller research institutions rarely belong.

As in industry, however, also in science and research, innovation might be linked to diversity. Mixed teams (research teams, panels, evaluation committees etc.) on all stages very likely will outperform homogeneous teams. Any strategy to increase innovation and research in Europe by promoting scientific excellence, therefore, should encourage to open the debate on 'excellence' and 'innovation' and ensure that all stakeholders, women and men researchers from different ethnic and cultural backgrounds and of different ages be heard in the process.

It is in the interest of any future oriented research policy to minimize the unintended biases in current ways of establishing excellence by encouraging a revised, gender sensitive notion of excellence as a guideline for future reference – even if this may mean to leave traditional tracks. In this process, a diverse composition of research groups as well as gender awareness could be made a precondition to excellence. Finding fair, objective and stimulating measures for excellence is in the interest of all researchers, research organisations, universities and industries as well as of society as a whole, because they are the only way to create, identify and maintain excellence throughout Europe.

Women scientists would also benefit from an increasing understanding by established institutions that new ways of working in terms of more flexible working hours, or employing people with less linear career paths can in fact be to the benefit of excellent research. By opening up research professions to a diverse set of people, societies would cast a wider net, catching and retaining not just more women scientists but scientists of different backgrounds. This may lead to employment of more researchers with less orthodox career paths as well as diverse cultural backgrounds – all elements which in industrial research, for example, have been identified as a very plausible way of stimulating innovation and more creative research.

Any sustainable strategy of support for women scientists must also include a perspective of long-term support into research infrastructures. With existing funding possibilities nearly exclusively focusing on project funding, there is a real scarcity of funding opportunities for women scientists' networks, playing a decisive role in the promotion of women in research. Yet, core funding for such organisations establishes an indispensable basis for the implementation of consistent strategies, continuous provision of services and for the efficient management of projects – all necessary elements to making a real difference for women in research.

The European Commission acknowledged the importance of this instrument when, in December 2001, adopting the *Science and Society Action Plan* which contained a series of actions to promote gender equality in science. Action 24 specifically aimed at setting up a *European Platform of Women Scientists*, a network of networks of women scientists and networks promoting women scientists committed to gender equality in scientific research.

Question B. 3 (a)
Which strategies and instruments have proved effective in other countries in demonstrably increasing the percentage of women in academic and research occupations in both the public and private sectors and particularly in achieving sharp increases in the percentage of women in executive and decision-making positions?

EPWS has recently been helping in the drawing up of a European Parliament own-initiative report on the subject of "Women and Science" and for this the Platform asked its member networks the following question – "can you help us identify best practices in terms what has worked in attracting

more female scientists to research careers and promoting them within these careers?" EPWS received many responses to this question, many identifying the importance of gender-sensitive teaching of subjects already at schools-age as of key significance. In terms of at a later stage, however, the following were identified as very useful instruments in encouraging women to enter and stay in science:

- At university level real **commitment of the Board of the University** (vice-chancellor, rector, deans) and enforcement of gender-sensitive policies at faculty level is essential for success.
- **Personal chairs for women** have led to more women full professors
- **Tenure tracks for women** have worked to attract more women to a university career
- **Adapting the selection process** and training committee members to apply the improved procedures led to a higher proportion of female applicants getting hired
- **Extra encouragement for female researchers** Experience with the Marie-Curie Research and Training network SEXASEX has shown that putting one extra sentence in the job advertisements ("Female scientists are especially encouraged to apply") was successful in receiving many more applications from female scientists
- **Women's networks**, smaller homogeneous networks have shown success in retaining women scientists
- **Ambassador's Network.** The Ambassador Network GAIA is composed of representatives from industry and academia. These representatives are charged with promoting women in Geoscience in their organizations
- **Empowerment activities** (career development workshops, networking events, etc) have proven successful in aiding and in retaining women scientists

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- **Specific programmes for the promotion of female researchers**. Main criterion still quality but bypasses old boys networks
- **Mentoring** has been shown to lead to more career steps for mentees
- **Role models act** to encourage women to continue in research careers
- **Research funds targeted at women** to counter under-funding of women in research
- **Equal pay** for the same job would encourage women to feel equally valued as a researcher
- Emphasis **on the importance of the integration of the family perspective** with regard to career development in order to attract female scientists – and increasingly also men scientists – to research careers.
- **Regulations on maternity leave** have been proven to encourage women to stay in research in Sweden

Question B. 9
What instruments and overall conditions are required in order to make academic and research activities compatible with family life? What useful experiences have been gathered in other countries?

Conditions which help scientists of both sexes make academic and research activities more compatible with family life are not only to the benefit of male and female scientists but to society as a whole. Some conditions of key importance to helping find the work-life balance are flexibility in working hours, options for part-time work, options for working from home, and the scheduling of meetings in core hours where schools and kindergartens are open. The provision of child care for employees is also instrumental, and support for women scientists to participate in research projects or conferences and to take part in training programmes when pregnant, part-time employed or when re-entering after family break, can also play a significant role. A good example of where some such schemes are in place is at the Federal institutions in Belgium where scientists can work part-time (50% or 80%) if they desire so, even if they are only temporarily employed. Also the Royal Belgian Institute of Natural Sciences has its own crèche which means that mothers can return to work even while still breastfeeding.

Another instrument would be financial support so that additional costs for travel and child care can be provided in order to facilitate the attendance to conferences and training seminars. In the case of a large project funded by the European Commission (the Network of Excellence entitled "Complex Metallic Alloys"), the organisers allow for short term missions making it easier for women with children to pay short research visits to other institutions than to leave their family for longer periods of time. Short-term missions are organized on a regular basis for the duration up to two weeks. The project noticed that this kind of action is very well received by their female researchers.

This same project also removed age restrictions for grants. In cases of grants and scholarships introducing age limits as a condition to apply, women with children often tend to be disadvantaged and even excluded if they took maternity breaks. Those kinds of restrictions make it even more difficult to progress in female scientific development and in reaching top-level positions in later career. In an action entitled "Call for Promotional Lecture" that is addressed to young female scientists the project eliminated the age limit to make it possible for women who postponed their careers due to raising children to be able to apply.

Question B. 4
In your view, what role can be played by indicators, agreed targets, monitoring schemes, gender action plans, equality plans, the cascade model and other instruments in sustainably improving the situation of young women academics and researchers? How can incentives and penalties be used to guarantee a demonstrable and verifiable increase in the percentage of women in these fields?

Key to the successful implementation of gender equality policies and measures in research and to the effective fulfilment of their goals, however, is commitment from those at higher level, a mandatory nature of the measures required as well as an understanding that some amount of time may be required before these types of schemes can be running smoothly.

The Gender Action Plans (GAPs) which were mandatory for certain research projects funded by the European Commission under the Sixth Framework Programme for Research and Technological development might serve as an example. The fact that the requirement for GAPs was obligatory encouraged and compelled researchers, evaluators and contract negotiators to take into consideration the gender issue in terms of both research and employment, when they otherwise might not have done so. Stimulating scientists to pay attention to the gender issue

helped people recognize its existence and that it was and is an issue requiring notice and awareness. Although the instrument as such might have needed more fine-tuning, its mandatory nature cited some real impact. As long as there is no mandatory 'box to tick', i.e. as long as it does not make a real difference in assessment and evaluation whether or not a research project, for example, is gender-sensitive, and evaluation does not lead to extra points for gender-sensitivity or taking-up gender equality issues or to the loss of evaluation marks in their absence, no substantial and lasting change in approach and behaviour may be expected.

A look at Germany compared with other EU countries

Question A. 2
How do you assess the situation for women at the various qualification and appointment levels in German institutions of higher education and research establishments as regards participation, promotion prospects and representation in comparison with other countries?

According to the She Figures 2006, at the highest level of research and academia in Germany (Grade A) 9.2% of those are female. This is lower than in most other countries in the EU27, only Belgium and Malta have a lower number of females in decision-making positions. Already at a grade lower (Grade B) which is for researchers not in the highest positions but higher than newly-qualified Ph.D holders, only 16.1% of these in Germany are women. This is again considerably lower than the majority of the EU27.

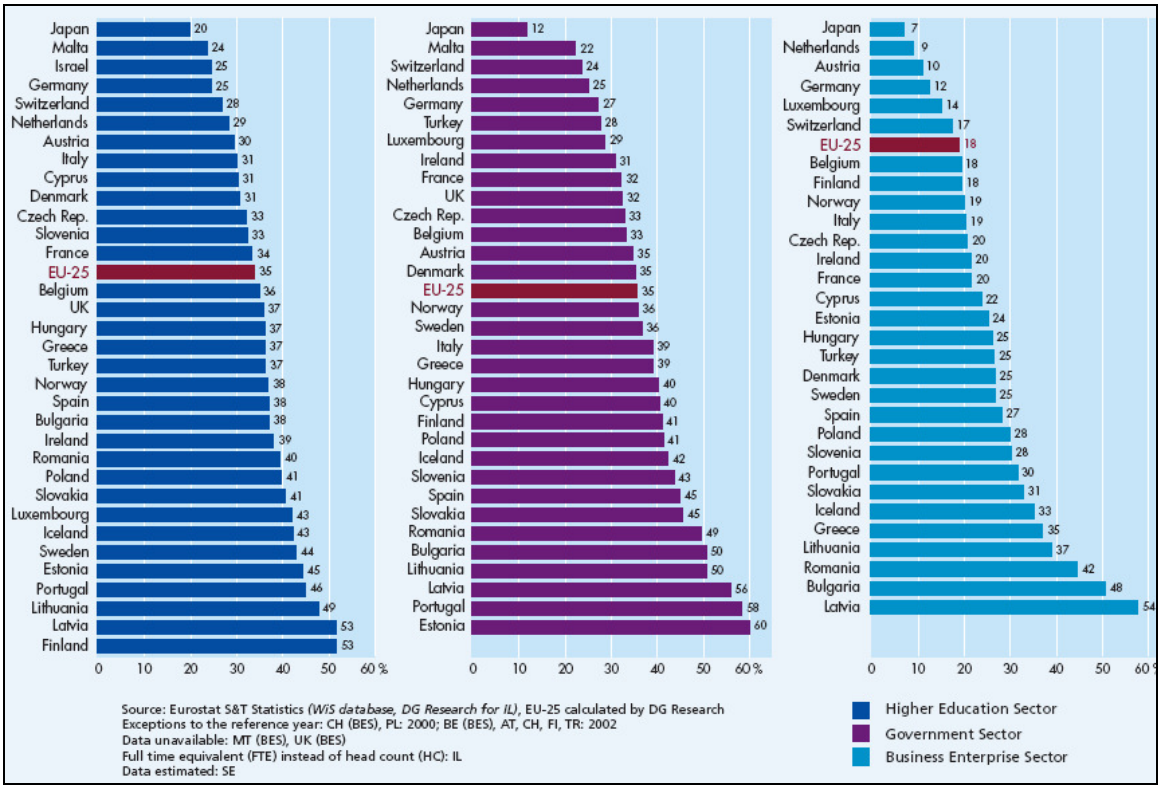
Proportion of female academic staff by grade and total, 2004

	GRADE A	GRADE B	GRADE C	GRADE D	TOTAL
EU-25	15.3	32.2	42.0	43.3	36.4
Austria	9.5	16.2	35.6	37.9	29.7
Belgium	9.0	20.7	33.1	46.6	32.7
Cyprus	10.2	17.2	37.5	33.5	31.0
Czech Republic	10.3	22.1	40.2	48.8	34.0
Denmark	10.9	24.4	37.6	42.7	31.8
Estonia	17.2	37.1	56.6	66.6	49.2
Finland	21.2	46.6	52.9	42.8	40.9
France	16.1	38.7	:	39.3	32.9
Germany	9.2	16.1	25.9	35.6	29.2
Greece	11.3	22.7	31.9	39.4	29.0
Hungary	15.4	30.9	46.0	36.7	36.3
Italy	16.4	31.4	43.8	:	31.2
Latvia	26.5	37.0	65.0	:	57.7
Lithuania	12.1	37.4	49.5	59.9	49.1
Malta	2.3	31.7	14.2	25.0	26.6
Netherlands	9.4	14.2	27.0	39.4	31.4
Poland	19.5	27.4	41.0	:	34.9
Portugal	20.9	34.4	43.4	50.4	41.8
Romania	29.1	49.1	:	55.2	42.9
Slovakia	13.5	31.5	48.5	54.3	41.1
Slovenia	12.9	25.8	39.3	47.9	31.4
Spain	17.6	36.1	52.2	50.6	42.1
Sweden	16.1	38.6	40.0	50.0	42.5
United Kingdom	15.9	31.2	46.1	46.1	41.2
Bulgaria	18.0	34.9	:	52.4	43.8
Iceland	15.1	29.9	53.0	:	33.8
Israel	10.6	21.6	33.6	44.7	24.6
Norway	15.7	28.2	45.5	48.8	37.6
Switzerland	16.5	23.3	33.8	41.3	30.8
Turkey	25.5	27.4	40.5	41.6	35.7

Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 57

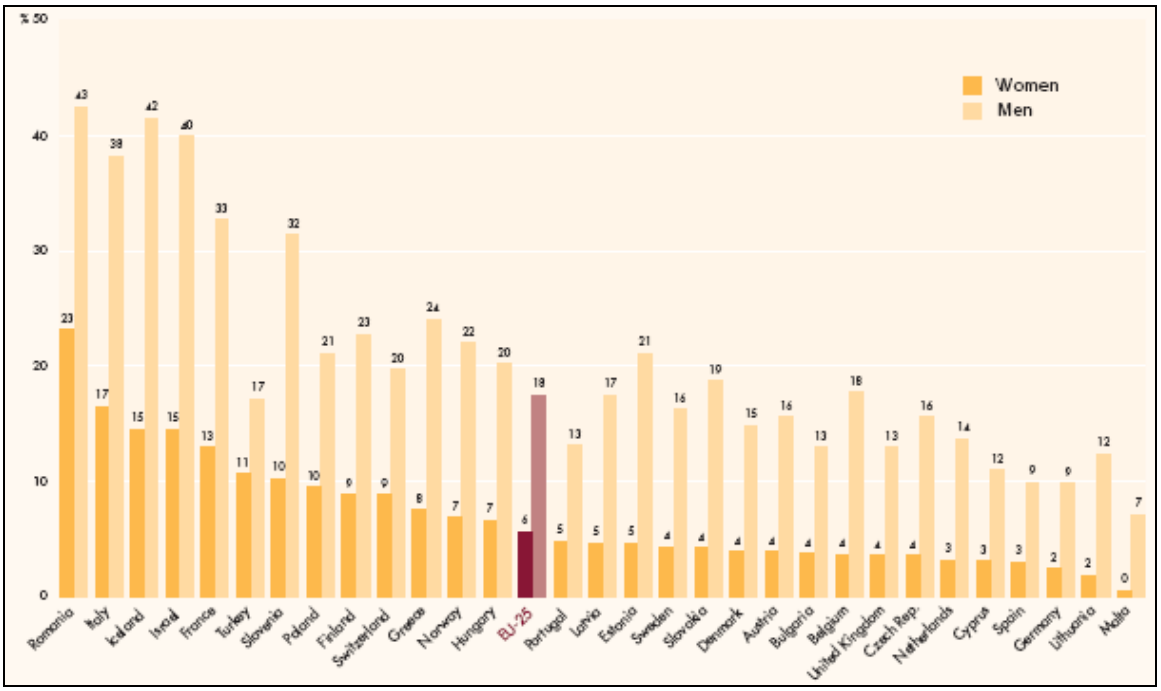
For further information, the graphs below visualize the position of Germany in comparison with other EU countries regarding the proportion of female researchers by sector, the percentage of grade A among all academic staff by sex, the proportion of female grade A staff by main field of science, the proportion of women on scientific boards, and the Gender Pay-Gap covering whole economy.

Proportion of female researchers by sector, 2003



Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 28

Percentage of grade A among all academic staff by sex, 2004



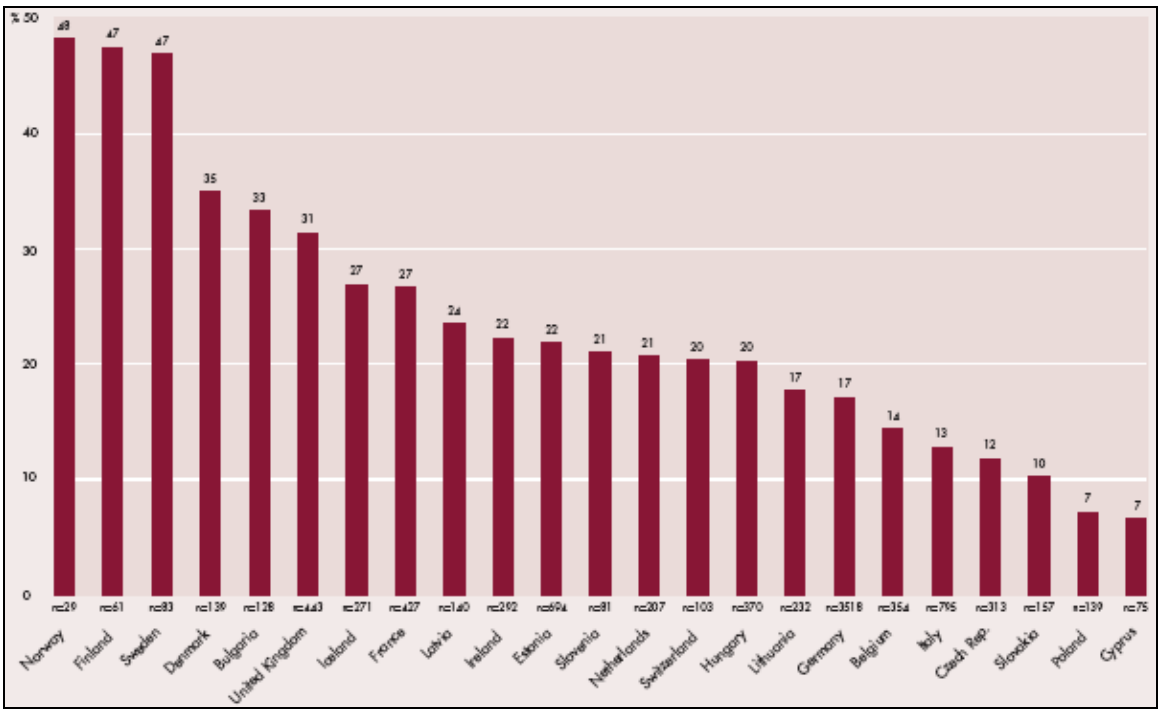
Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 58

Proportion of female grade A staff by main field of science, 2004

	NATURAL SCIENCES	ENGINEERING AND TECHNOLOGY	MEDICAL SCIENCES	AGRICULTURAL SCIENCES	SOCIAL SCIENCES	HUMANITIES
EU-25	11.3	5.8	15.6	14.9	16.6	23.9
Austria	4.4	3.7	8.9	5.6	9.6	19.1
Belgium	7.7	4.2	8.3	3.6	11.5	13.0
Cyprus	18.8	0.0	-	-	11.1	0.0
Czech Republic	9.2	4.5	14.2	9.1	13.0	14.5
Denmark	6.9	1.4	14.9	16.2	13.2	15.2
Finland	11.3	6.3	21.6	16.0	28.6	35.1
France	12.3	6.5	15.3	:	17.0	30.1
Germany	5.6	3.8	5.8	8.9	8.0	16.3
Italy	15.9	6.1	11.1	11.8	17.1	29.4
Latvia	0.0	:	38.5	:	39.3	36.4
Malta	0.0	0.0	8.3	0.0	0.0	0.0
Netherlands	5.3	3.1	6.3	11.0	11.5	16.3
Norway	9.9	4.9	16.8	14.0	18.3	24.6
Poland	16.9	8.7	28.2	24.3	20.6	22.5
Portugal	27.5	5.0	26.2	27.0	20.4	X
Slovakia	13.0	6.6	17.0	3.5	17.3	20.6
Slovenia	3.8	5.4	19.0	20.4	14.5	17.8
Sweden	11.7	7.1	15.3	18.2	19.7	25.8
United Kingdom	8.2	4.9	22.0	14.7	21.2	17.2
Switzerland	7.3	10.1	18.1	12.8	23.4	19.9
Turkey	25.7	15.6	34.5	13.6	24.3	20.3

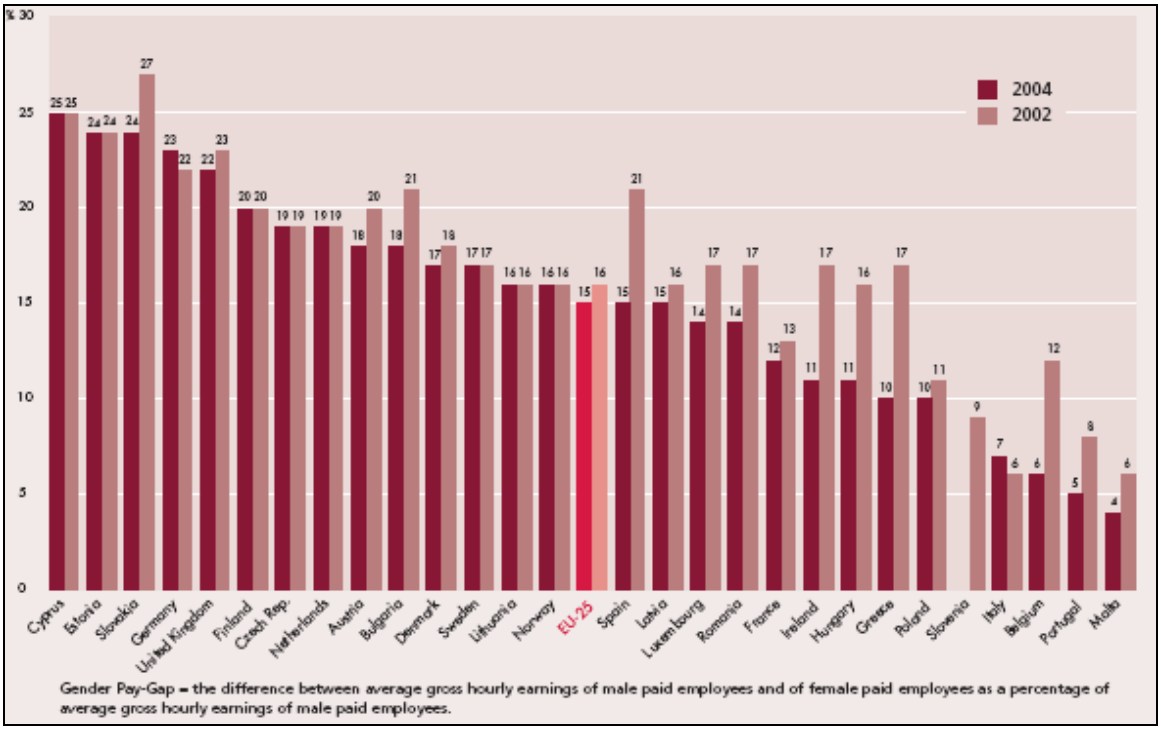
Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 60

Proportion of women on scientific boards, 2004



Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 71

Gender Pay-Gap covering whole economy, 2002 and 2004



Source: European Commission, Women & Science: Latest Statistics and Indicators – She Figures 2006, p. 74