



European Economic and Social Committee

SOC/502
Women in science

Brussels, 15 October 2014

OPINION
of the
European Economic and Social Committee
on
Women in science
(own-initiative opinion)

Rapporteur: **Ms Vareikytė**

On 22 January 2014, the European Economic and Social Committee, acting under Rule 29(2) of the Rules of Procedure, decided to draw up an own-initiative opinion on

Women in science
Own-initiative opinion.

The Section for Employment, Social Affairs and Citizenship, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 30 September 2014.

At its 502nd plenary session, held on 15 and 16 October 2014 (meeting of 15 October), the European Economic and Social Committee adopted the following opinion by 169 votes to 1 with 4 abstentions.

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1. Conclusions and recommendations

- 1.1 The future of the European Union depends on research and innovation and Europe needs 1 million more researchers by 2020 to stay competitive in the world. Research could also create 3.7 million jobs and increase annual EU GDP by EUR 795 billion by 2025 if the target of investing 3% of EU GDP in R&D by 2020 is achieved¹.
- 1.2 Promoting gender equality and equal opportunities for women and men is a commitment of the EU in all its policy areas, including research and innovation (R&I). Data available at European level show a striking imbalance between women and men in the European research sector².
- 1.3 Gender balance is crucial for a well-functioning research system. To achieve their policy objectives for research, the Member States and the EU as a whole must use all the human capital at their disposal.

To the European Commission:

- 1.4 The Committee urges the European Commission to propose a recommendation to Member States containing common guidelines on institutional change to promote gender equality in universities and research institutions, as announced in the European Research Area communication of 2012.

¹ P. Zagamé, L. Soete, "The cost of a non-innovative Europe", 2010.

² An overview of the current situation is available in part 2 of the document.

- 1.5 The recommendation should encourage Member States to remove legal and other barriers to the recruitment, retention and career progression of female researchers; address gender imbalances in decision-making processes and strengthen the gender dimension in research programmes.
- 1.6 The Committee also calls on the Commission to continue developing and implementing awareness programmes aimed at attracting more girls into STEM fields (science, technology, engineering and mathematics) and more women into research.
- 1.7 Greater cooperation between the relevant Commission directorates (DG Education and Culture and DG Research and Innovation) should be ensured.
- 1.8 The Committee further recommends collecting and disseminating sex-disaggregated data related to research and innovation within the Eurostat framework.

To the Member States:

- 1.9 Member States should aim to improve their legal and policy frameworks for gender equality in research, based on the recommendations set out in the ERA communication and the Horizon 2020 programme.
- 1.10 The Committee urges the Member States to ensure that expenditure on research & development reaches 3% of GDP, the level set in the Europe 2020 strategy.
- 1.11 Member States should also make European Structural Funds and other funding schemes available for institutional change initiatives, in accordance with the ERA communication.
- 1.12 The evaluation, accreditation and funding of research institutions and organisations should be linked to their performance on gender equality.
- 1.13 Member States, together with public/national research institutions and the social partners, should explore ways of ensuring a work-life balance by developing and implementing family-friendly policies for both female and male researchers.
- 1.14 Member States should support and strengthen the dialogue between research institutions, businesses and related social partners.

To research stakeholders:

- 1.15 The EESC urges research institutions and universities to ensure gender balance in their decision-making, selection and other relevant departments.

- 1.16 Gender equality efforts must be incorporated into the planning processes of research institutions and universities and their respective departments.
- 1.17 The Committee calls for more dialogue with publishers and editors of scientific publications in order to remove gender bias from and increase female scientists' contributions to scientific publications, editorials, reviews and survey articles.
2. **Overview of the current situation**³
- 2.1 In 2005, the European Council set a goal for women to occupy 25% of leading public sector research positions. However, gender imbalance in decision-making is persistent: in 2010, only 15.5% of heads of institutions and 10% of rectors in the higher education sector were women.
- 2.2 Horizontal segregation across different economic sectors and fields of science persists. The proportion of women among researchers is higher in the higher education and government sectors than in the business enterprise sector. Across the EU, the proportion of women among professors (grade A) is the highest in the humanities and social sciences (28.4% and 19.4% respectively), and lowest in engineering and technology (7.9%).
- 2.3 Women's academic careers also remain hallmarked by considerable vertical segregation. In 2010, the proportion of female students (55%) and graduates (59%) exceeded that of male students, but men outnumbered women among PhD students and graduates (the proportion of female students stood at 49% and that of PhD graduates at 46%). Furthermore, women constituted 44% of grade C academic staff, 37% of grade B and only 20% of grade A. The under-representation of women is even more striking in science and engineering, where they account for only 33% of academic grade C personnel, 23% of grade B and just 11% of grade A⁴.
- 2.4 Reaching a proper work-life balance remains a key element for achieving gender equality. There is not just a "glass ceiling" but also a "maternal wall" hindering the career of female researchers, as women still carry the main burden of care and domestic work.
- 2.5 Other critical barriers and constraints to the recruitment, retention and advancement of women in the European scientific system include: a lack of democracy and transparency in recruitment and promotion processes, gender bias in evaluating performance, opacity in decision-making bodies and persistent stereotypes of girls/women and science. European research institutions still need substantial modernisation to provide the structural conditions for equal opportunities for women and men.

³ Source of statistical data in part 2: "She Figures 2012: Gender in Research and Innovation", European Commission, 2013.

⁴ Grades A, B and C represent the level of position in the institution – respectively, high, medium and low levels.

3. **Benefits of gender equality in research and innovation**

- 3.1 Research and innovation (R&I) are key drivers for European economic growth and Europe needs 1 million more researchers to stay competitive in the world. Research and innovation are not only prerequisites for the EU to become a knowledge society, they also could create 3.7 million jobs and increase annual EU GDP by EUR 795 billion by 2025 if the target of investing 3% of EU GDP in R&D by 2020 is achieved⁵.
- 3.2 Gender equality is crucial for a well-functioning research system. To achieve their policy objectives for research, the Member States and the EU as a whole must use all the human capital at their disposal, in terms of talent and resources. Tapping into the full potential of women's skills, knowledge and qualifications will contribute to boosting growth, jobs and European competitiveness, which are key drivers of a prosperous economy.
- 3.3 For high-quality research to be relevant to society, a number of different solutions should be considered. This is best ensured when research communities are diverse, and when they have the ability to cooperate across and within disciplines. Research and education are integral to policy formulation and public administration, and contribute to a more critical, diverse and open public debate⁶.
- 3.4 Recruiting more women to the research sector can boost knowledge resources, enhance the quality of knowledge production and make the sector more robust and competitive. Studies suggest that heterogeneous research groups are more robust and innovative than homogeneous groups⁷ and that diversity of knowledge and social capital in teams is important for producing new ideas⁸. Also, gendered innovations in science, medicine, engineering and the environment use sex and gender analysis as a resource to stimulate new ideas, new services and new technologies⁹.
- 3.5 A comparison of Member States' gender indexes suggests that the countries with higher scores in the Gender Equality Index (GEI) tend to spend a greater percentage of their GDP on research and development, as well as achieve better results in innovation.
- 3.6 Integrating a gender analysis into R&I content ensures that research, as well as today's innovations, adequately take into account the needs, behaviours and attitudes of both women and men. Studies show that the integration of sex and gender analysis increases the relevance

⁵ P. Zagamé, L. Soete, "The cost of a non-innovative Europe", 2010.

⁶ Women in science, Norway, 2010.

⁷ Campbell LG, Mehtani S, Dozier ME, Rinehart J, "Gender-Heterogeneous Working Groups Produce Higher Quality Science", 2013.

⁸ <http://www.genderinscience.org.uk/index.php/consensus-seminars/recommendations-report>.

⁹ Report by the Expert Group on "Innovation through gender", European Commission, 2013.

and quality of research and innovation. It also adds value to society and business by making research responsive to a broad and diverse user base and by creating more inclusive innovation processes, as demonstrated by the Gendered Innovation project¹⁰.

4. European policy actions

- 4.1 The Committee urges the European Commission to propose a recommendation to Member States containing common guidelines on institutional change to promote gender equality in universities and research institutions, as announced in the European Research Area communication of 2012. The recommendation should encourage Member States to remove legal and other barriers to the recruitment, retention and career progression of female researchers; address gender imbalances in decision-making processes and strengthen the gender dimension in research programmes. It should also include a comprehensive list of the most efficient examples existing in the countries of the European Research Area (ERA).
- 4.2 The Committee also calls on the Commission to continue developing and implementing awareness programmes aimed at attracting more girls into STEM fields (science, technology, engineering and mathematics) and more women into research, as well as special programmes for career guidance and assistance. In this regard, greater cooperation between the relevant Commission directorates (DG Education and Culture and DG Research and Innovation) should be ensured. Such cooperation would enable joint efforts to secure better results in terms of gender equality, research and education as a whole.
- 4.3 The Commission should ensure a gender balance in the EU's education and research mobility schemes.
- 4.4 The Committee further recommends collecting and disseminating sex-disaggregated data related to research and innovation within the Eurostat framework, in order to ensure more reliable and comparable indicators, smoother data collection and monitoring processes, which would assist the development of the post-2015 strategy for equality between women and men.

5. National and institutional actions

- 5.1 The EESC urges Member States to align their national policies on gender equality in research and innovation on the decisions taken at EU level regarding the European Research Area and the Horizon 2020 programme.
- 5.2 The Committee urges the Member States to ensure that expenditure on research & development reaches 3% of GDP, the level set in the Europe 2020 strategy. Currently, EU-28

¹⁰ Report by the Expert Group on "Innovation through Gender", European Commission, 2013.

average expenditure on R&D stands at 2.07%¹¹, which hinders economic growth and job creation and prevents research institutions from making use of the full talent pool.

- 5.3 Member States should develop and implement awareness programmes tailored specifically to attract more girls into STEM fields and women into research, starting with the promotion of these subjects in schools.
- 5.4 The EESC believes that one of the most effective measures for improving gender balance in education and research consists of offering financial incentives to education and research institutions that show confident progress in ensuring a gender balance. Member States should link the evaluation, accreditation and funding of research institutions and organisations to their performance on gender equality.
- 5.5 In order to provide a strong basis for much-needed structural change in Europe's research institutions and organisations, the Member States and their respective institutions should develop a methodology for monitoring and evaluating the efficiency of action on gender equality.
- 5.6 Member States, together with their respective research and education institutions and the social partners, should explore ways of ensuring a work-life balance by developing and implementing family-friendly policies for both female and male researchers, such as childcare facilities, teleworking, part-time work, etc.
- 5.7 The EESC urges research institutions to ensure balanced gender representation in their decision-making, selection and other relevant bodies.
- 5.8 Gender equality efforts must be incorporated into the planning processes of research institutions and universities and their respective departments. Action plans must be developed at all levels, with annual reports on target figures, measures and results. Departments must be actively involved in the process and made responsible by deciding on their own goals and measures. Women should also take part in such planning to ensure that female researchers and their areas of interest are not ignored.
- 5.9 Science and innovation are most beneficial to businesses. Member States should therefore support and strengthen the dialogue between research institutions, businesses and related social partners. Such dialogue could ensure more business-related research and help research institutions diversify their budgets.

¹¹ EUROSTAT, 2012.

- 5.10 The Committee calls for more dialogue with publishers and editors of scientific publications in order to remove gender bias and to increase female scientists' contributions to scientific publications, editorials, reviews and survey articles.
- 5.11 The dialogue should also be ensured among scientists of different generations – thus enhancing cooperation in research and providing informal learning opportunities for young researchers.
- 5.12 Leadership exerts a major influence on research activity and plays a vital role in quality development. Women as well as men must be included in training to take on high-level positions. Leaders must be given training on issues related to gender equality in research, which is a distinct area of expertise.
- 5.13 The Committee endorses international and national award systems, such as UNESCO-L'Oréal "For Women in Science" programme¹², "Athena Swan"¹³ and other initiatives, as they not only encourage women to engage in scientific activities and invite institutions to implement structural changes, but also become a very efficient communication tool for promoting gender equality.

6. **Examples of staff policy and organisational measures**

- 6.1 One of the measures used to promote gender balance has been moderate positive action, as provided for by the Treaty on the Functioning of the EU and within the limits established by the case law of the European Court of Justice. Such action allows prioritising those applicants of a gender with less than 40% of employees in the same category of post, if multiple applicants have approximately the same qualifications.
- 6.2 Research institutions and universities have two different ways of counteracting possible gender bias when recruiting people. The first is to set guidelines to ensure that appointment procedures are supervised by the faculty board, gender equality ombudsman or other responsible body. The second approach is to demand that faculties report on recruitment so that gendered statistics can be compiled on job applicants, short-listed people and people hired. It is important to counteract informality in appointment practices, as this tends to work in men's favour. This includes "informal invitations" to apply for positions, and the tailoring of job advertisements to better suit men's qualifications and experience.
- 6.3 Tailored programmes and childcare centres can be set up. This can be used in job advertisements to attract applicants. Offering an optional addition to a fellowship period after parental leave is also effective in attracting more applicants of both sexes.

¹² http://www.loreal.com/Foundation/Article.aspx?topcode=Foundation_AccessibleScience_WomenExcellence.

¹³ <http://www.athenaswan.org.uk>.

- 6.4 Several European countries have established separate databases of female scientists and experts. These are especially useful when searching for a particular scientist or a scientist with specific skills for a research team or institution body where females are under-represented.
- 6.5 Gender budgeting should be fostered to ensure a gender-sensitive assessment of budgets and distribution of resources. This involves incorporating a gender perspective at all levels of the budgetary process, thus enabling equality to be monitored and assessed and targeted interventions to be made as needed.
- 6.6 Special national and/or institutional funds could be established specifically for providing financial support to female researchers in disciplines with a low female ratio. Also, institutions and/or departments that work actively to promote gender equality and show good results can be rewarded through various incentive programmes.
- 6.7 Gender balance in tenure and committees could be improved by encouraging departments to invite female scientists from third countries as guest professors and as committee members.
- 6.8 Employers should avoid asking for a high degree of specialisation when advertising for research fellows and post-doctoral research fellows, in order to attract more applicants and avoid filtering candidates too early.
- 6.9 All appointment committees should have female members and be gender balanced. This may contribute to the application and acceptance of female applicants.
- 6.10 Gender awareness and knowledge of gender equality should be included in management training programmes. Qualifications in gender equality can be a criterion when filling management vacancies, and be part of management evaluation¹⁴.
- 6.11 It is crucial that gender equality be monitored through appropriate indicators on human resources and allocation of financial resources. Underlying data collection should thus always ensure compliance with gender disaggregation.
- 6.12 Research groups have a stimulating effect on the research environment. Studies have shown that groups with people from different backgrounds have a better chance of obtaining a broader research perspective. Studies also show that establishing mixed research groups creates better conditions for creativity and innovation, and increases publication frequency¹⁵.

14 [IDAS](#) – a national manager development programme, which aims to increase the number of women in senior academic positions at Swedish universities and university colleges.

15 "The Scientist", 7 November 2005 and "Science", Vol. 309, 2005.

- 6.13 Start-up packages (consisting of funds to run projects, procure equipment and pay salaries for research assistants) can make it easier for newly appointed women to establish themselves as researchers. Experience shows that women do not negotiate as good research conditions as men do. Start-up packages are an attempt to remedy this, and should particularly be considered.

Brussels, 15 October 2014

The President
of the
European Economic and Social Committee

Henri Malosse
