

Stocktaking 10 years of “Women in Science” policy by the European Commission 1999-2009



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edited by Marina Marchetti and Tiia Raudma,
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Foreword

In this “stocktaking” document, the history of the first ten years of activities on “women in science” has been compiled, described and also analysed. This past decade has represented a long journey for women in science – a journey occasionally comprised of small steps, at other times they have been more comprehensive or more direct, but behind each undertaken action, I can assure the reader, there has been a clear motivation, an expected impact and high hopes.

What was the starting point? What direction was taken? What was the path that was “walked”... and where exactly are we now? This report provides comprehensive answers to these questions, leaving ample space for reflection. It also shows that the journey is far from being over.

Ten years ago, the rationale taken on board by the European Commission was evident: *“too few women in science, slow-moving careers and a strong under-representation of women at the top level in research decision-making”*. The underlying argument – *“No data, no problem, no policy”* – therefore became the motivation to initiate and guide our work: statistics gathering was carried out across Europe, problems were highlighted, possible solutions identified and gender research policies designed and implemented by individual Member States. This “stocktaking” illustrates how the Commission provided the impulse, and acted as a catalyst and multiplier, shaping and coordinating the efforts.

The “stocktaking” report also describes and assesses the large number of projects funded by the 6th and 7th European Framework Programmes for Research and Technological Development, highlighting their contribution to our two big “steps” – the first aimed at encouraging, preparing and adapting women to the existing research system, and the second aimed at adapting the research system to women’s needs (structural change).

An attentive reader may note the progressively less frequent use, throughout the text, of the term “Women and Science” in favour of a more frequent reference to “Gender and Science”. This change actually reflects an evolution resulting from knowledge that has been acquired along the way. In fact, after the first years of activities, it became clear that our goal was no longer just to attain equality in science but rather to also ensure quality in science.

We may then say that a “fair science in a fair society” is our journey’s final destination. This implies an equal participation of all available potential, and all points of view, in the development of a “science and technology” that is aimed at responding to the needs of all human beings.



Amartya Sen, a Nobel Prize winner for economics, advocates that the freedom to utilise one's own potential should be recognized as a basic human right. This message is important for women and, in particular, for women working in science and technology. Today's societal challenges rely more and more on scientific and technological solutions and scientific advice. We just cannot afford to leave out more than 50% of our talent from this process. Consequently, we need to not only increase the number of women in science for reasons of equity, to improve their position and role in science decision-making, thereby creating an "equal society", but also to allow women and men to fully utilise their knowledge and skills.

An excellent science considers not only purely biological sex differences but also gender issues – the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women. As a result – when both sex differences and gender issues are considered in knowledge production, in knowledge sharing and use, in policy-making, and in funding allocation – a new and huge innovation potential can be unlocked.

This report is not only about what to do, but how to do it and with whom. The reader no doubt realises just how ambitious this journey actually is, and will understand the need for cooperation, mutual learning, with new partnerships and communities – even beyond the borders of Europe.

I would like to thank the project participants, experts, member state representatives and officials who have contributed over the years to the actions included in the "stocktaking".

And a very special thank you to my colleagues Marina Marchetti and Tiia Raudma who have worked so hard to make this report unique, complete and so useful for all of us, thereby preparing the way for the rest of our journey.

I am convinced that, all in all, the eventual winner in this long journey will be Science itself.



Luisa Prista, Head of Unit,
Scientific Culture and Gender Issues

Introduction

Ten years ago the European Commission started its activities on “women in science”. This Report records this ten-year history, analyses the activities undertaken, provides an assessment of their effectiveness and appropriateness, and – whenever possible – includes a reflection on what did not work, what was not done, and how these omissions could be addressed. The authors believe that this report – a stocktaking of 10 years of activities on “women in science” – will help the European Commission to make decisions on future policy because of the perspective provided by the process of “taking stock”. And this report should also help future proposal presenters, providing them with the background to the topic, and the details of previously funded projects, thereby placing the Framework Programme calls into a policy development context.

Looking at how much money the European Commission has invested in “women in science” over the years – 15 million EUR for “women in science” in the 6th Framework Programme (over 4 years), and in the 7th Framework Programme, 21.7 million EUR for the first 4 years (2007-2010) on “gender in research” – this report should help answer the obvious question: has Europe got its money's worth?

Policy documents usually conclude with recommendations to the Commission and/or the Member States on how to improve a certain situation. Here, the aim is to identify the recurring recommendations, to look at how /if they have been implemented and by whom: the European Commission and/or Member States or other actors. These recommendations have been grouped according to three major objectives, identified right at the beginning of EU activities in this field by the 1999 ETAN report:

- a. Deepen the knowledge on the situation of women in science
- b. Increase the number and role of women in science, engineering and technology
- c. Mainstream gender in all other policies, specifically research.

Chapter 1 of this Report begins with a policy perspective, following the historical flow of initiatives and activities, their inter-correlation and complementarities.

Each of the following chapters records the activities and initiatives used to implement one of the three major objectives listed above.

In Chapter 2 (responding to “Deepen the knowledge on the situation of women in science”), we look at what the European Commission has done to clarify the situation of women in science, with data collection and comparison; what the Member States have done in their private research sectors, and how the Commission interacted with them to integrate the activities into the larger research



framework; and what the Commission and the Member States have done in their policy forum – the Helsinki Group on Women and Science – to exchange information and to implement best practices.

In Chapter 3 (responding to “Increase the number and role of women in science, engineering and technology”), there is a comprehensive description of the initiatives taken to increase the number and role of women in science, engineering and technology. Some were taken directly and independently by the European Commission; others – aimed at changes in the Member States – were “pilot projects”, funded through the Research and Technological Development Framework Programme, suggesting possible developments for the national authorities.

In Chapter 4 (responding to “Mainstream gender in all other policies, specifically research”), we examine how gender has been mainstreamed into EU policies, with a special focus, of course, on research and technology development policy, the area of activity for DG Research.

The Annexes provide comprehensive background material for the Report, comprising both inventories and the results of analysis. Annex I groups the recommendations by policy objective, reflecting the “stocktaking” process; Annex II contains gender-related excerpts from the 6th and 7th Framework Programmes’ implementation documents, such as the Guide for Applicants; Annex III reflects those Work Programme texts in the 7th Framework Programme’s “Cooperation” specific programme where gender is mentioned; Annex IV list the call texts for “Science and/in Society” pertaining to gender; Annex V provides summaries of the “Women in Science” projects funded under “Science and/in Society” in the Framework Programme; Annex VI and Annex VII list the publications and events, respectively, produced by the European Commission on “Women in Science”.

Each part of the Report can be read separately, as “stand-alone” – for example, a reader wishing to know about the “women in science” projects funded through the Framework Programme can refer to Chapter 3 for the development history, by topic, and then to Annex V for details of any particular project of interest. Such a structure results in repetition of numerous aspects – policy is described in Chapter 1 as a historical process, whereas the details of policy are covered throughout the Report.

The aim of this work is to celebrate the first 10 years of work on “women in science”, to record the effort deployed by the Commission, the progress made, but also to shed light on the omissions and the missed opportunities. How these omissions could be addressed, and how the new challenges posed by the coming decades could be met, constitutes the final part of the Report, the section titled Conclusions.

Chapter 1 History of “Women and/in Science” policy in the EU

This chapter provides an overview of how EU policy on women in science has evolved over the years. The recommendations that have been made – from conferences, reports prepared by expert groups, internal assessments – to improve the situation of women in science have fed into the policy developed by the European Commission, resulting in the formulation of policy objectives. In this report, the policy objectives have been grouped under three aims: 1) knowing the situation of women in science in Europe; 2) recruiting, promoting and

retaining more women in science careers; 3) mainstreaming gender in research policy. The following chapters cover each group of objectives in turn, looking at how these objectives have been addressed. These chapters also contain more detail on the policy history associated with each objective.

For a comprehensive table of recommendations, the corresponding policy objective and response, see Annex I.

European research policy has been a model for “gender mainstreaming” (consideration of gender in all aspects of policy) since 1999. The “momentum” for the inclusion and promotion of gender issues in research policy was encouraged by the then Commissioner Edith Cresson. Some Member States were already paying attention to the issue, while others took their lead from the Commission, with more or less enthusiasm depending on their cultural and historical backgrounds. In addition, there were two conditions that helped trigger the momentum: the mobilisation of women scientists, and a high level political commitment.

Over the years, three research Framework Programmes¹ supported activities to increase the number and role of women scientists, as well as to mainstream gender in the content of research.

Despite the fact that the “momentum” for gender equality had been slowing down, progress towards a European Research Area “by /for /on women”² was continuing, albeit more slowly than previously. Therefore, a new policy direction was decided upon by the Commission. The new focus for activities was on the research institutions and organisations where women in science work, rather than just on the women themselves. “Fixing the administration”³ became the new objective.

1. FP5 (1997-2001); FP6 (2002-2006) and FP7 (2007-13)

2. COM(1999) 76 of 17/02/1999

3. Londa Schiebinger at the conference “Gender issues in research – Innovation through equality of opportunity”, Berlin, April 18/19, 2007



Since 1957 and the Rome Treaty, the principle that men and women should receive equal pay for equal work has been enshrined in the EC Treaties. The Treaty of Amsterdam made the principle of equality between men and women an objective and a fundamental Community principle (Article 2). Article 3(2) also gives the Community the task of integrating equality between men and women into all its activities (“gender mainstreaming”). The Treaty of Amsterdam expanded the legal basis for promoting equality between men and women and introduced new elements of major importance. The new Article 13 makes provision for combating all forms of discrimination and Articles 137 and 141 allow the EU to act not only in the area of equal pay but also in the wider area of equal opportunities and treatment in matters of employment and occupation. The Treaty of Lisbon reinforces the principle of equality between women and men by including it in the values and objectives of the Union (Articles 2 and 3(3) of the Treaty on European Union) and by providing for gender mainstreaming in all EU policies (Article 8 of the Treaty on the Functioning of the European Union).

Already in 1993, the European Commission’s DG XII “Science, Research and Development” funded a study on “The position of women in scientific research within the European Community”, which focused on the barriers that women encounter in entering and

advancing in this field. The first requirement, according to the experts, was to convince women themselves of the usefulness and need for their involvement in scientific professional organisations, “in order to advance in a sphere as competitive as this field (science and technology)”. The experts also saw a need to convince scientific institutions like Academies of Science to admit women as members, “if only as role models for other women in the field”. These recommendations were discussed during the international workshop, “Women in scientific and technological research in the European Community”¹.

Among the main actions that the experts and other stakeholders asked the Commission to implement were: collection and comparison of statistical data from Member States (MS), and from European programmes relevant to women in science and technology (S&T) – e.g. gender vs. academic status in universities, gender vs. positions in S&T in MS, gender vs. funding, gender vs. S&T policy and funding committees; development of positive action programmes for women in S&T research – evaluate positive actions in MS and transfer the most successful to others, require a written equal opportunity statement as a

1 European Commission, “Women in Science – International Workshop – 15th to 16th February 1993, Brussels – Proceedings”, edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

part of all applications in European S&T research programmes, not fund conferences where no women were included as speakers; use of European Structural Funds to support women in S&T – to increase their numbers, train them in technical positions, provide them with specific grants (reserved for women), and increase their number in top level positions.

More or less at the same time, several Member States had begun to recognise that there was an issue regarding women scientists, and that there was a need to make the most of all talents. In the UK, the 1993 White Paper “Realising our Potential” stated that “women are the UK’s biggest single most undervalued and therefore underused human resource”. Following this analysis, a unit was set up in the UK Department of Trade and Industry responsible for women and science². In Germany, a similar unit had been set up in the Ministry of Research and Education already in 1989. In Denmark an action plan for women in science was launched in 1996, and in Sweden, there were also steps taken in the mid-1990s to increase the presence of women in scientific institutions.

Following the Beijing Conference in 1995, the Commission decided to adopt a mainstreaming strategy in order to pursue the gender equality objective (Communication

of the Commission “Incorporating Equal Opportunities for Women and Men into all Community Policies and Activities”³). In that context, gender was to be mainstreamed in all EC policies and, in research, gender mainstreaming was introduced during the negotiation phase of the 5th Framework Programme (1999-2002).

In May 1997, Agnes Wold and Christine Wennerås published an article in *Nature*, titled “Nepotism and sexism in peer review”⁴. In this well known article, they demonstrated that there was a gender bias in the peer review process which is used for the selection and promotion of researchers: women needed to publish much more than men to receive an equivalent score. This article triggered a wide-ranging debate, with feminist and women scientists’ organisations calling for more gender equality in EU funded research.

These calls reached Eryl Margaret McNally, Member of the European Parliament (EP) (1994-2004) who was influential in the research policy process as member of the EP’s Energy and Research Committee, as well as being in the Committee on Women’s Rights and Equal Opportunities. Ms McNally introduced gender equality in the amendments adopted by the EP, and made

2 www.set4women.gov.uk

3 COM(1996)67 final

4 *Nature* 387, 341-343, 1997



it clear that gender equality was to be taken seriously in the 5th Framework Programme.

The call for gender equality in research was also taken up by Edith Cresson, then Commissioner for Research. At the opening of the Commission-Parliament joint conference on “Women and Science⁵” in April 1998, Commissioner Cresson announced that, in FP5, the Commission would promote specific activities to increase the participation of women in research. A campaign to encourage women to participate in FP activities would be launched, and all invitations to submit proposals would explicitly recommend increasing the participation of women. Research topics of particular interest for women would be promoted, as well as the networking of people and organisations active in this area.

In November 1998, in order to better know the challenges lying ahead for women’s participation in European research policy, the EC set up the “European Technology Assessment Network (ETAN) working group on Women and Science”. The group – consisting of a dozen women scientists – was to produce a report by the end of October 1999, analysing the situation, and the challenges arising from it, and putting forward policy recommendations. The report

was then to be discussed by a group of national civil servants, comprising representatives of all the Member States involved in promoting women in scientific research and technological development.

In July 1999, the communication “Women and Science: Mobilising women to enrich European research”⁶ defined the first objective of the Commission in the policy field: to stimulate discussion and sharing of experience in this field among Member States. The first step was to be the creation of a policy forum where Member States could discuss their experiences and share the most successful ones. It also foresaw actions to mainstream gender in the 5th Framework Programme.

In its resolution of May 1999⁷, the European Council supported the Commission’s intentions, inviting Member States (MS) to cooperate with the Commission in order to: produce indicators and comparable data (in particular data showing the horizontal and vertical distribution of women in the science and technology (S&T) system at all levels of government, higher education, and private sector); measure the participation of women in S&T in Europe; promote a dialogue about policies implemented in the MS and guidelines on how to transfer these; in general, to pursue the objective of gender

5 European Commission “Women and Science – Proceedings of the conference”- 1998, Luxembourg: Office for Official Publications of the European Communities

6 COM (1999)76

7 OJ C201/1 of 16/7/99

equality in science by appropriate means (e.g. action plans).

In October 1999, the above-mentioned ETAN working group on women and science delivered its report: “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality⁸”. It proposed actions to promote legislative change in the Member States in favour of women in science: oblige employers to keep sex-disaggregated statistics, aiming at gender balance in public bodies; develop sex-disaggregated statistical data (for universities and research institutions: academic rank, discipline, pay; for industry: management level, pay; for funding bodies: application and success rates for grant bids); development of quality indicators; dissemination of statistics (handy booklets on statistics, central websites). The ETAN report was later discussed and approved both by the European Parliament, in its Resolution of 3 February 2000⁹, and by experts and stakeholders, during the conference “Women and Science: Making

change happen” organised in April 2000 in Brussels¹⁰.

As a response to recommendations from the ETAN report, and the call by the Council for Member States to “actively engage in the dialogue proposed by the Commission” (see Footnote 9), the “Helsinki Group on Women and Science” was set up by the Commission in late 1999. Named after its first meeting location in November 1999, the Helsinki Group (HG) brought together national representatives from all EU Member States and the countries associated to the Framework Programme. The HG also addressed the problem of developing statistical profiles and working toward harmonised statistics and equality indicators through the creation of a sub-group of statistical correspondents. The HG members have been meeting twice a year since November 1999. One of the first tasks assigned to each delegate was to produce a national report by the end of 2000, describing any existing national policies to promote women in science. On the basis of these national inputs, “National policies on women in science in Europe”¹¹ was later published.

8 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality” – 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

9 PE284-656 – A5-0082/1999 in OJ C 309/57, 27.10.2000

10 European Commission, “Women and science: Making change happen” Proceedings of the conference – 3 to 4 April 2000, Luxembourg: Office for Official Publications of the European Communities

11 European Commission, “The Helsinki Group on Women and Science – National policies on women and science in Europe” – 2002, Luxembourg: Office for Official Publications of the European Communities



Following the request from the 1999 Council Resolution, the Commission reported in 2001¹² to the European Parliament and the Council on the results achieved since the adoption of the 1999 Communication. The achievements of the Helsinki Group were acknowledged, and the need to mainstream the gender dimension in the research policy process was confirmed. This was particularly important in the context of the development of the open method of coordination of national research policies – an essential element of the strategy for the creation of the European Research Area. The targets set in the 1999 Communication were recognised as ambitious and distant, but they were confirmed.

As consequence, in June 2001¹³ the European Council invited the Commission to propose an action plan on “science and society”. Specifically, in relation to the “women in science” issue, the Council invited the Commission to: continue and intensify its efforts to promote the role of women in science and technology, and to ensure an effective mainstreaming of the gender dimension when implementing the 6th Framework Programme (2002-2006) and developing the European Research Area; promote gender equality in those areas

dealing with human resources and mobility activities; pay particular attention to the gender dimension in benchmarking activities. It also invited the Member States and the Commission to support the Helsinki Group in continuing its work, and to deepen cooperation to promote the role of women in European research. In addition, the policy approach needed to be complemented by specific research to improve the understanding of gender and science issues in Europe, and tools needed to be developed to support the policy process.

Against this background, the newly created Women and Science Unit of DG Research launched four new initiatives at the conference it organised on “Gender and Research” in November 2001¹⁴, as part of the “Science and Society Action Plan” (December 2001). These were: creation of a European platform of women scientists; production of a set of gender indicators, in cooperation with the statistical correspondents of the Helsinki Group, to measure progress towards gender equality in European research; analysis of the role and place of women in research carried out in the private sector; analysis of the situation facing women scientists in Central and Eastern Europe and the Baltic States.

12 Commission Staff Working Paper “Women and Science: the gender dimension as a leverage for reforming science” – SEC(2001) 771 – 15 May 2001

13 Council Resolution “Science and Society and Women and Science” – OJ 2001/C 199/01 of 14/7/2001

14 European Commission, “Gender and Research. Conference Proceedings”, 2002, Luxembourg: Office for Official Publications of the European Communities

During the aforementioned “Gender and Research” conference in 2001, a ministerial round-table session provided an opportunity to assess progress at national level and discuss possible activities. It was suggested that scientific careers needed to be made more attractive to girls and young women, and that the considerable obstacles faced by women scientists in their careers needed to be addressed. The Czech Republic reported that a new national Contact Centre for Women and Science had been set up in Prague by the Ministry of Education, Youth and Sports, to promote equal opportunities in research and development, provide institutional assistance to Czech women scientists and support their involvement in European research activities. Sweden explained that their government was obliged to consider equality in all areas of decision making and policy formation, including research, since gender policy was no longer seen as just a women’s issue.

In a separate session during this conference, the initial results from the Helsinki Group’s (HG) policy review were presented. Attention was drawn to the motivating effect that the HG had within countries. In many cases, national steering committees on women and science had been established to focus attention on the gender issue. As regards future perspectives, members of the HG highlighted the need to modernise science and the scientific career system, encouraging mobility, flexibility and a better work-life

balance. Monitoring and evaluating policy development at national and European levels, and the mainstreaming of gender in the Framework Programme, were also seen as being essential. The final report “National Policies on Women and Science in Europe” was later published (in 2002, see Footnote 14), describing the categories of measures developed in the 30 European countries represented in the HG to promote women in science: networking, quotas and targets, role models and mentoring; earmarked chairs, research funds and prizes. It included an analysis of national legislation mainstreaming gender issues in other policies, and professional/private life balance policies.

As foreseen in the above-mentioned 2001 Science and Society Action Plan, a working group was set up in December 2001 to analyse women researchers in the private sector¹⁵. The High Level STRATA-ETAN Expert Group¹⁶ was composed of academics, gender experts, industrialists, and also human resource representatives from international companies with significant research departments. To provide the expert group with missing data, the Commission funded a study (Targeted Socio-Economic Research-TSER), on “Women in research in

15 The definition of “Private sector” included both the Business Enterprise Sector (BES) and the Private non-profit sector (PNP) as identified and defined in the Frascati Manual (1993)

16 STRATA (STRATegic Analysis – Expert Thematic Analysis)-ETAN



the private sector”¹⁷, to check on the “suspected” under-representation of women in industrial research. The STRATA-ETAN group prepared a report “Women in industrial research. A wake-up call for European industry”¹⁸: it examined the options for industry, and innovation policy, to increase the participation of women in research in the private sector.

The 6th Framework Programme (FP6) was launched in June 2002. A specific budget was dedicated to women in science activities under “Structuring the ERA” strand. A total of 15 million euro was to be spent on projects to network and raise gender awareness; to encourage young women to undertake scientific careers, and retain them; on gender research and gender mainstreaming in research. In order to mainstream the gender dimension in research content, a special tool was included, for the first time, in FP6. In addition to the general recommendation to promote equal opportunities for men and women, each proposal for large projects was obliged to include a Gender Action Plan (GAP), explaining which activities would be carried out in relation to gender. The GAPs aimed at: increasing women’s (or men’s

where men were in a strong minority) participation in the research workforce, especially at decision-making level; allowing for a better understanding of the gender dimension in research, especially for the definition and evaluation of scientific excellence; raising gender awareness within and outside the European Commission (for those involved in the design, evaluation, selection, negotiation, implementation and follow-up of research projects).

As foreseen in the 2001 Science and Society Action Plan, and in preparation for the next EU enlargement, the Commission established another group of experts in September 2002, known as the ENWISE (*Enlarge Women In Science to the East*) Expert Group. Their task was to report on the conditions and status of women scientists in the Central and Eastern European countries, the Baltic States and the new Eastern Länder of Germany, also providing a perspective on the Balkan region. Recommendations were expected on how to raise awareness of the need for gender equality in scientific research in the “ENWISE countries”, and how to enhance the place and role of their women scientists in the European Research Area, as well as to increase their participation in Framework Programmes. The result was the report “Waste of talents: turning private struggles

17 European Commission, “Women in research in the private sector” by Meulders, Danièle et al., 2003, Luxembourg: Office for Official Publications of the European Communities

18 European Commission, “Women in Industrial Research – A wake-up call for European industry” – 2003, Luxembourg: Office for Official Publications of the European Communities

into a public issue”¹⁹ which was launched in January 2004, in time for the accession of the ten Central and Eastern European Countries to the EU. The ENWISE final report represents a collective view of the situation, respecting the national diversities created by different historical and geopolitical contexts.

In October 2003, “She Figures 2003” was published – a unique compilation of key data, presenting the latest figures on the participation of women in scientific education and employment. It presented descriptive statistics and indicators for EU Member States and Associated Countries as well as explanatory texts and methodological notes. As such, the document could be considered the initiator of “a new era”, making available sex-disaggregated data on human resources in the European Research Area. This meant that all the countries involved in this activity were able to monitor the indicators, thus observing the changes occurring in the gender dynamics of the European Research Area. Bringing together these data in a coordinated way was the result of a specific effort on the part of the Statistical Correspondents of the Helsinki Group on Women and Science.

19 European Commission, “Waste of talents: turning private struggles into a public issue – Women and Science in the Enwise countries” – 2003, Luxembourg: Office for Official Publications of the European Communities

In 2004 the Commission prepared an analysis of the current situation, together with some ideas about future steps. This was the staff working paper “Excellence and Innovation – Gender Equality in Science”²⁰, which was presented to the Council to satisfy the latter’s requests to be updated on women and science policy (Resolution, 2001) and on the initiative on women in industrial research (Resolution, 2003). The document admits that – despite some progress – much remained to be done. It summarised the progress made at national level, recognizing that gender equality policies in science had become an important issue in all EU Member States, mainly embedded in equal opportunities legislation. To promote gender equality in science, many countries had established structures such as national steering committees and units dedicated to women in science in relevant government departments. Some countries had established national resource and coordination centres for women in science activities²¹ while universities and research

20 SEC(2005)370 – 22 February 2005

21 CEWS – Centre of Excellence Women in Science, and Kompetenzzentrum Women in Information Society and Technology were established in Germany in 2000, the National Contact Centre – Women and Science was established in Czech Republic in 2002 and the National Resource Centre for Women in SET launched in United Kingdom in 2004. Other countries (eg. Austria) have established regional centres at all universities. Overview and links to national activities see also: http://europa.eu.int/comm/research/science-society/links_en.html#WomenandScience



institutions were increasingly requested to develop gender equality.

This 2004 working document also identified the challenges for the Member States (MS) and the European Commission, and proposed the following: that a target be fixed to increase the number of women in leading positions in public research to 25% by 2010, and a target for the proportion of women in new recruitments to at least 33%; in order to avoid gender bias in selection procedures, MS were invited to develop yearly statistics on recruitment; MS should also increase their gender monitoring of: gender pay gap for researchers, work-life balance, dual careers and mobility issues; attrition of women from research and academia, career progression and promotion, women as patent originators and in innovation; appointment procedures and recruitment strategies for composition of scientific boards.

In April 2005, the Competitiveness Council²² emphasised the need to continue promoting gender equality in science through national and European programmes and increasing the participation of women in science and in industrial research, and invited the Member States to formulate ambitious targets for the participation on women in leading positions in science. As a consequence, the

22 Council conclusions "Reinforcing human resources in science and technology in the ERA", 18/4/2005

Commission established an expert group on "Women in Research Decision Making" (WIRDEM) in 2006 to analyse research decision-making in Europe from a gender perspective, and to identify good practice and measures that have proven successful in the promotion of women to top level positions. The final report called "Mapping the Maze: Getting more women to the top in research"²³ called for major changes in the research systems in order to address the under-representation of women at the top in research.

In 2006, an update of "She Figures" was published, showing only a slight improvement in the situation of women in science, engineering and technology.

In 2007, the European Parliament's Committee on Women's Rights and Gender Equality discussed a report²⁴ presented by the deputy Britta Thomsen on "Women and Science", which supported the Commission's and Council's recommendations on the topic and called on the Commission and Member States to intensify their activities in addressing the issue.

In 2007, attention was paid to the problem of the gender pay gap – both on the general

23 European Commission, "Mapping the Maze: Getting more women to the top in research" – 2008, Luxembourg: Office for Official Publications of the European Communities

24 EP 2007/2206(INJ)

level and specifically in research and scientific careers. The Communication “Tackling the pay gap between women and men” published by DG Employment in July 2007²⁵ analysed the problem at large, while the “Study on the remuneration of researchers in the public and private commercial sector”²⁶ was published by DG Research. The latter document did not focus particularly on the gender gap, but such a gap in researcher salaries was evident from the results.

In March 2007, the Mid-Term Assessment of Science and Society Activities²⁷ under FP6 was published. The evaluation of the “women and science” part of the activities was quite positive, even if some problems were identified. The experts found that the individual projects did indeed conform to the main objectives of the Science and Society Directorate but that the wider aims were not met. Most of the projects were concerned with raising awareness on the issues of women’s participation in science (i.e. through conferences, reports) as well as establishing concrete structures (i.e. databases, centres, platforms) that could provide the basis for long term strategies and measures to

increase women’s participation. The primary target audience for these were the women scientists themselves. However, the report concluded that in order to address the gender dimension of the whole system of science, the general public, researcher communities and private sector also needed to be included. The report also said that more generous funding would have increased the effectiveness and depth of the activities since long term sustainability of crucial activities was important. At the national level, according to the report, potential impact seemed too fragmented and thus did not sufficiently reach the whole system of science education, with gender mainstreaming often existing only in words.

The 2007 Assessment also included specific recommendations: focus should be shifted from the issues of Women and Science in general towards specification of more concrete problems of individual groups of women (targeting and strengthening particularly vulnerable groups, such as women in post-communist countries); future activities should be urged to take dissemination more seriously and include it as a core activity by developing in-depth strategies; impact and dissemination would be stronger if the databases of women scientists could be integrated into mainstream databases that are used by industry, academia and national and transnational institutions, where both sexes are equally represented; impact strategies

25 COM(2007)424 of 18/07/2007

26 European Commission, “Study on the remuneration of researchers in the public and private commercial sector”, 2007, Luxembourg: Office for Official Publications of the European Communities

27 European Commission, “Mid-Term Assessment of Science and Society Activities”, 2007, Luxembourg: Office for Official Publications of the European Communities



should be broadened and deepened (renewed dialogue with the public, greater involvement by the media, use of multimedia, art), and implementation should be monitored.

In the same time, DG Research has been involved in three of the six priority areas for EU action on gender equality listed in the “A Roadmap for equality between women and men – 2006-2010”²⁸, published in March 2006 by DG Employment: reconciliation of private and professional life; equal representation in decision-making; and elimination of gender stereotypes.²⁹ For each area, the Roadmap identified priority objectives and actions. It was clearly recognised that the Commission could not achieve the mentioned objectives alone, as in many areas the centre of gravity for action lay at Member State level. Thus, the Roadmap represents the Commission’s commitment to driving the gender equality agenda forward, reinforcing partnership with Member States, and other actors. An initial, internal assessment of the Roadmap implementation was done in 2008. It analysed the ongoing activities in the three specific sectors implemented by DG Research, and the conclusions were positive: “DG RTD has made good progress in terms

of its implementation of the Roadmap.” A final assessment of the implementation will be done in 2010, and a new Roadmap will be launched to move forward with equal opportunity mainstreaming in EU policies.

To update the information available on gender mainstreaming in national policies, a study was commissioned³⁰ and its results published in 2008 in the report “Benchmarking policy measures for gender equality in science”³¹ (as an update of the 2002 Helsinki Group report on national policies). All the countries³² in the study had equal treatment legislation, with only three³³ without a ministry with responsibility for women’s issues or a statutory gender equality agency. A number of countries had declared their commitment to gender mainstreaming since 2002, leaving 12 countries (out of 38) with no mainstreaming plans. All but two offer women’s or gender studies courses in their universities, and sex-disaggregated statistics are becoming more available, with only three countries not reporting such data³⁴. Only very few

28 COM(2006)0092 of 01/3/2006

29 The other priorities were: equal economic independence for women and men; eradication of all forms of gender based violence; promotion of gender equality in external and development policies

30 To Elyse Ruest-Archambault from the University of Sussex

31 European Commission, “Benchmarking policy measures for gender equality in science” – 2008, Luxembourg: Office for Official Publications of the European Commission

32 EU Member States plus Iceland, Israel, Norway, Croatia, Switzerland, Turkey, Albania, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia, Montenegro, Serbia

33 Former Yugoslav Republic of Macedonia, Israel, Switzerland

34 Luxembourg, Bosnia and Herzegovina, Montenegro

countries have approached the levels of women's participation in science, at graduate and professorial levels, suggested by the European Commission in 2005 (25% in top level positions and 33% at recruitment level).

Considering the slow progress being made towards genuine gender equality, a new policy direction was decided upon by the Commission. The new focus for activities would be on the research institutions and organisations where women in science work rather than on the women themselves. "Fixing the administration" (see Footnote 3) had become the new objective. The initial steps in this new policy direction were taken in the 7th Framework Programme with the launching of extensive public awareness-raising activities in the scientific community itself (where there is still only limited concern about the lack of women at the top in research), as well as in the public at large (to influence decision makers, families who could encourage their daughters to follow science careers, museums that could present science – in an informal and attractive way – to young people and especially girls). The idea was to make people aware of the stereotypes regarding women in science, and the discrimination that exists in the management of research (considered to be "men's business"). These activities acted as an introduction to the new focus on research institutions, both public and private, where the Commission would

like to encourage a modernisation of the working culture through making the human resource systems more gender and diversity-aware. The anticipated impact of the funded actions, according to the 2008 Science in Society work programme, was to change attitudes regarding gender diversity in research organisations and universities, particularly in initial recruitment and promotion to senior positions. The activities to be funded would also "yield recommendations to policy-makers on the reorganisation of university curricula at European level (Bologna process), in order to address the gendered horizontal segregation existing between disciplines".

In 2009, two new studies were produced by the Commission: "She Figures 2009"³⁵ and the report "Gender challenge in research funding"³⁶. The updated data collection does show an increase in the proportion of women in research, particularly at the top level (the percentage of women professors increased from 16% in 2002 to 19%) but the improvement is quite small, especially compared to the efforts that have been made to address the situation.

35 European Commission, "She Figures 2009 – Statistics and Indicators on Gender Equality in Science" – 2009, Luxembourg: Office for Official Publications of the European Commission

36 European Commission, "The Gender Challenge in Research Funding – Assessing the European national scenes" – 2009, Luxembourg: Office for Official Publications of the European Commission



The report on research funding was the result of a working group set up by the Commission to provide recommendations “on the improvement of transparency and accountability of procedures used in selection committees for grants and fellowships awards and of access to research funding in general”. The report analysed the gender dynamics among applicants, recipients and gatekeepers of research funding, in funding processes, instruments and criteria, and the role of key funding organisations in promoting gender equality in research³⁷. The results show that decision-making and other gate-keeping of research funding, such as participation in evaluation and peer review, continue to be dominated by men. This lack of women gives the image of an organisation unwelcoming to women. Only in some countries is the gender monitoring of major funding organisations regularly conducted and the monitoring results published. Data availability by sex is the first cornerstone of gender monitoring, but data on funding success by sex was available from only a few countries of the 33 covered.

One of the recommendations of the report was to “take the gender challenge seriously” and promote gender equality in research funding – i.e. create structures; establish

action plans (with specific actions to promote returner schemes after career breaks, provisions improving work-life balance); fund research on obstacles; consult women scientists’ organisations, trade unions, etc, when designing and evaluating policies and measures; set up specific institutional grants supporting universities to improve research environments for women; collect gender disaggregated data and publish the results; improve the transparency in evaluation procedures, criteria and results for recruiting and promotion.

The call to establish action plans for promoting gender equality in research was the first of the recommendations to which the Commission responded. A call for proposals was launched in the 2008 Science in Society work programme on the collection of information on policies and activities (from policy makers, research funding agencies, academies, private sector human resource departments) as regards the implementation of gender diversity management in research organisations. The objective was the eventual sharing of good practice, e.g. transparency in recruitment, promotion, and nomination, thereby improving gender equality in science. Good practice in this area is reflected in the “Guidelines for Gender Equality Programmes in Science” that have been prepared by the PRAGES project (see Annex V). The 2010 Science in Society work programme goes deeper, with a call for proposals to implement structural change and achieve lasting

37 Data from 33 countries: 27 member states and 6 associated countries (Croatia, Iceland, Israel, Norway, Switzerland and Turkey)

progress in the field of gender equality in science. Research organisations and universities have been called upon to develop and implement tailored multi-annual action plans, where steps towards real change in gender management are defined.

The main instrument used for gender mainstreaming in the 6th Framework Programme – the Gender Action Plan (GAP) – was discontinued in the 7th Framework Programme. The scientific community did not support its continuation, seeing it as an unnecessary bureaucratic burden, and the Commission was interested in simplifying the FP procedures. The loss of the GAPs has been criticised by gender experts, and new ways of mainstreaming gender in FP7 funded research projects have been sought, one of which is the “toolkit” for gender mainstreaming (gender-awareness training, tailored for specific research fields, and aimed at project proposers, Commission project officers, etc) that was launched in 2009.

A list of proposed priority actions was submitted by ministers Mariano Gago (PT) and François Biltgen (FR) to the informal Competitiveness Council of 4 May 2009³⁸ in order to ensure that a future revision of the Lisbon strategy’s 7th integrated guideline

would take into account working conditions for researchers. Among the issues to be tackled, they listed the need to improve job and employment conditions of researchers in order to make scientific careers more attractive and to increase the share of women in research. In particular, they invited Member States and public research institutions to adopt policies allowing men and women to pursue scientific careers with an appropriate balance between professional and private life, contemplating adequate provisions regarding employment conditions and particularly maternity leave and parental child-rearing leave, namely for PhD students.

The modernisation of universities and other research institutions, through making their human resource systems more gender-aware (called “structural change”) must therefore be reinforced with the direct commitment of Member States and all other stakeholders involved in the issues, especially the social actors. But other activities also cannot be left aside: the mainstreaming of gender issues in the content of research is essential too, as well as the promotion and retention of women in science and technology. And there is still the need to carry out pure gender research in order to find out, for example, if there could be another way of doing research. At the beginning of 2010, with the new Lisbon Treaty entering into force, and a new Commission coming into office, the

38 Council of the European Union “Better careers and more mobility: A European partnership for researchers – information from the Commission and the Presidency”, 10003/09, 18/05/2009



opportunity should be taken to re-launch the political momentum for gender equality in research, with the contribution of Member States and all other stakeholders remaining an essential factor.

Chapter 2

Knowing the situation of
“Women in Science” in
Europe

Chapter 2 Knowing the situation of “Women in Science” in Europe

In the 1990s, when the European Commission started dealing with the issue of “women in science”, there was only a suspicion that there was a problem: that there were limited numbers of women working in science and technology, and even fewer at the top level. There were, however, no statistics to back up this suspicion. But statistics are important, as Hilary Rose said at the Conference “Women and Science” (April 1998): “no statistics, no problem, no policy”³⁹. The first step taken by the European Commission was then to collect information in order to properly understand

the situation of “women in science” in Europe – the first of the policy objectives that were introduced in Chapter 1.

And in this search for information on women in science, this report distinguishes between three categories: 1) the data the European Commission has itself collected on women in science (She Figures); 2) information on what the Member States themselves were responsible for: the private sector situation; 3) what the European Commission has done, together with the Member States, to gain and exchange policy information on “women in science” (the Helsinki Group on Women and Science: a policy forum).

39 European Commission, “Women and science: Proceedings of the conference Brussels, April 28-29 1998” – 1999, Luxembourg: Office for Official Publications of the European Communities

2.1 EU data collection (She Figures)

The single major publication that compares all EU and associated countries on performance indicators for Women in Science is She Figures, a statistical booklet published every 3 years by the European Commission since 2003. She Figures is a powerful tool for demonstrating the gender inequalities present in research.

The European Commission receives regular requests for copies of the She Figures – possibly the most quoted data source in conferences and publications on women in science, allowing for the analysis and user-friendly presentation of data. And since the She Figures are regularly updated, comparisons across time are gradually becoming more meaningful.

Further work needs to be done on the development of a number of indicators on women and science that are not currently collected by Eurostat/OECD, and where the definition has therefore not been harmonised amongst Member States – for example, the definition of «researcher» as opposed to «academic» (the levels of academic/researcher are different in each country).

In order to gather further statistical information, DG Research has commissioned various studies and reports, and this work is on-going.



The road to “She Figures”

At the end of the 1990s, very little statistics were available at the EU level on women active in the scientific community. What was known, however, indicated that there was a genuine shortage. A number of conferences and reports over the course of the decade (1993 International Workshop on Women in Science⁴⁰, 1998 Women and Science conference⁴¹, ETAN “Women and Science” report⁴²) had highlighted the issue of the lack of data on women in science, and had called on the Commission to act. Consequently, the 1999 Communication from the Commission “Women and Science – Mobilising women to enrich European Research”⁴³, originated from an acknowledgement of the underrepresentation of women in science and the European Commission’s wish to contribute to the correction of the gender imbalance in scientific professions.

The proceedings of the above-mentioned 1998 conference included a statistics appendix with the existing data on Women in Science. A table covered the years 1994/1997 (according to availability of breakdown) and indicated the number of women in academia, divided into 4 seniority levels: A (Full Professor), B (Associate Professor), C (Assistant), D (Other); a detailed table with definitions was also provided in the same appendix. The countries covered included a number of EU Member States, with a note acknowledging the difficulty in obtaining data for the Central and Eastern European countries. The data were collected from the Statistical Offices of each country. The same publication also included a table on the percentage of female full professors in the natural sciences and engineering, but only for a limited number of countries. Data with information on women on scientific boards of private research institutions, and on women in the scientific academies of the EU Member States, were at the time available for only very few countries. Statistics on the number of women in the European Commission (Commissioners and civil servants) and those elected as members of the European Parliament, were included. There are additional data in the report on the percentage of women sitting on boards such as Industrial Research and Development Advisory Committee (IRDAC), European Science and Technology Assembly (ESTA), Committee for Scientific and Technical Research (CREST), and information on

40 European Commission, “Women in Science – International Workshop – 15th to 16th February 1993, Brussels – Proceedings”, edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

41 European Commission, “Women and science: Proceedings of the conference Brussels, April 28-29 1998” – 1999, Luxembourg: Office for Official Publications of the European Communities

42 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

43 COM(1999) 76 Final – 17 February 1999

women on national research council boards and committees that was available for a few Western European countries. However, there was no harmonised definition of committees and boards.

The 1998 conference proceedings include an overview of existing data collections on human resources in R&D. In the early 1990s, Eurostat, the statistical service of the European Commission, was asked to collect data on persons in science and technology occupations, broken down by gender and age. While this request began to be slowly fulfilled, it appeared to be more problematic to collect data on seniority in academia (due to insufficient harmonisation of seniority grades) or on “boards”, “funding” or “membership”. Regarding OECD and UNESCO, the report concluded that “neither organisation collects statistics concerned with rank and gender for scientific occupations in general or for academia in particular”. At the level of the individual member states, data collections on human resources in R&D were reported to be highly fragmented and on an ad hoc basis. It was also difficult, when looking at senior positions in academia, to get a breakdown by individual disciplines. Even more difficult was the collection of data on top posts held by women in the business enterprise sector.

Following the open call for tenders launched by Eurostat⁴⁴ in May 1999 – one lot amongst

11 being for the “Design and collection of statistical indicators on women in science” – the contract was awarded to Eurogramme (Luxembourg) to develop the project for the 15 EU Member States. This project was meant to extract comprehensive and reliable data from existing data collections at national level, in order to calculate indicators (including new ones) on women in science. A database was to be created, to be subsequently transferred to the relevant domain in the New Cronos database of Eurostat. In particular, the project’s objectives were to: collate the various studies carried out by the 14 non-EU countries on the availability of statistics relevant to the topic “women in science”; identify statistics from these studies to be included in the primary database that had been developed for the 15 EU Member States; develop indicators already designed for the 15 EU Member States by using data obtained from the aforementioned sources; propose relevant statistical methodologies to determine reliable and regular statistical indicators on the topic “women in science”; initiate the collection of new statistics resulting from the implementation of the proposed methodologies, if permitted by the budget.

Once the data was collected for the then 15 Member States, the project was extended to cover the 14 non-EU countries of the Helsinki Group on Women and Science (see Section 2.3), in order to build upon the work developed so far for the 15 EU Member

44 OJ S 102 of 28.05.1999



States, identify statistics and the sources of data available at the national level, and to eventually provide a comprehensive and European-wide picture of the participation of women in science. While these initial data were being collected, the Helsinki Group created a sub-group of Statistical Correspondents, generally officers working in national statistical offices, research or education ministries, which has been meeting twice annually since 2001. Its task was to collect data on women in science from tertiary education through to employment, to build a database, and to propose indicators on women in science, noting that some data on female students in the various academic disciplines⁴⁵ were already available in education statistics.

At the 2000 Women in Science conference⁴⁶, Eurostat acknowledged the paucity of gender statistics in the science and technology (S&T) area. A number of explanatory factors were mentioned: insufficient harmonisation, insufficient political will to include gender breakdown in the legal basis for statistics collection, and lack of resources. The sex-disaggregated human resources data from the Community

Labour Force Survey accounted for only a small portion of the EU population. Plans for the forthcoming years included a revision of the manuals for data collections on S&T, and additional requests to the Member States for R&D personnel to be broken down by sex. The Eurostat-DG Research joint project, resulting in the Women in Science database managed by DG Research, was seen as a crucially important development.

A summary of the current state in data collection on women in science was provided during the 2003 Women in Science conference⁴⁷. Since 2002, both Eurostat and OECD were collecting the sex breakdown for the human resources variables in R&D. OECD collected data for R&D personnel by economic sector, occupation and sex in both Headcount and Full-time equivalent, and Eurostat collected the breakdown of researchers by sector, main field of science and sex – in both the Higher Education and Government sectors. Progress was also reported to have taken place in the HRST (Human Resources in Science & Technology) data from the Labour Force Survey, which was already sex-disaggregated. However, significant problems of incorrect, missing or infrequent data still persisted, as did a certain lack of harmonisation and better definitions,

45 European Commission, Explanation of Key Figures. "Key Figures in education in the European Union, 1997"

46 European Commission, "Women and science: Making change happen" Proceedings of the conference – 3 to 4 April 2000, Luxembourg: Office for Official Publications of the European Communities

47 European Commission, "Women in Industrial Research, Speeding up changes in Europe" Proceedings of the conference – 10-11 October 2003, Luxembourg: Office for Official Publications of the European Communities

for example in the area of seniority and main fields of science.

The work of the Helsinki Group's Statistical Correspondents resulted in a first publication, *She Figures 2003*, presenting several indicators on Women and Science in Europe. *She Figures 2003* was structured as four chapters: critical mass, gender differences across scientific fields, seniority in academia and R&D, and gender equity in setting the scientific agenda. The production of the booklet was partly outsourced by DG Research to Eurogramme, the company who prepared the first database, with the unit "Women in Science" following up and contributing to different tasks relating to both the data collection and the editing process. The layout and format for *She Figures* mirrored *Key Figures*⁴⁸, the annual publication of DG Research monitoring several indicators relating to STI (Science and Technology Indicators) and R&D policies in Europe⁴⁹.

Due to the success of *She Figures 2003*, it was decided to continue the data collection exercise in order to be able to observe time progressions, and to include new countries that had joined the European Union or the Framework Programme for RTD. New editions of *She Figures* were thus produced

in 2006 and 2009⁵⁰. *She Figures 2006* updated the previous edition and maintained the same structure, based on the same four chapters. This time, the bulk of the data collection and *She Figures* production was undertaken internally by the Women and Science Unit in DG Research, whereas tasks relating to editing, layout and printing were outsourced. With *She Figures 2006*, a special effort was made to present all the indicators in a language that would be easily understood by a non-specialist audience. For example, indicators such as the Dissimilarity Index and the Glass Ceiling Index⁵¹ were explained in dedicated text-boxes.

Over the years, an increasing proportion of the data needed to produce *She Figures* has been extracted directly from the NewCronos database, maintained by Eurostat⁵². Most is taken from Eurostat RTD Statistics, collected according to Commission Regulation 753/2004 on statistics on Science and Technology (2004). Some indicators are taken from the Education statistics, and some from the Labour Force Surveys (data collection based on population surveys that started back in 1960 and have been continuously refined and regularised over

48 The available editions of *Key Figures* can be found and downloaded at http://ec.europa.eu/invest-in-research/monitoring/statistical01_en.htm

49 ANNEX I, ANNEX II – Raw data and indicators SF 2003

50 The latest *She Figures* (2009) can be found at: http://ec.europa.eu/research/science-society/document_library/pdf_06/she_figures_2009_en.pdf

51 ANNEX III, ANNEX IV – Raw data and indicators SF 2006

52 In the Eurostat database, annual R&D gender disaggregated data have been available since 1987



the years). Thus, currently some 70% of the She Figures indicators are calculated on the basis of data from the Eurostat R&D, Education, and Labour Force surveys. The rest is collected through the Statistical Correspondents of the Helsinki Group on Women in Science.

The data still collected by the Statistical Correspondents concern seniority grades for researchers in the Higher Education Sector and Government Sector, female heads of institutions in the Higher Education Sector, funding applicants and beneficiaries, and members of scientific boards. Also, some new indicators have been included in She Figures 2009. Wherever possible, breakdown by age groups and additional time progressions have been added. One of the new indicators is female heads of institutions in the Higher Education Sector, with an additional breakdown by institutions able to award PhDs. Progressively, data collection via the Statistical Correspondents is posing quality control issues that need to be resolved. For example, in the past, She Figures has used the category of “academics” as a proxy for “researchers”. This translates into inconsistency of figures when comparing data from the Eurostat R&D Survey with the She Figures Women in Science database. As the first step in the hopefully eventual convergence towards a common definition, She Figures 2009 already lists the definitions that the Statistical Correspondents used for the different seniority grades, as well as for

the research funds and boards. There has also been discussion about the possibility of creating a Frascati-type “Manual on Women in Science” that would harmonise data collection and make future comparisons much more relevant.

Eurostat and OECD together also developed a harmonised R&D statistics questionnaire⁵³, which provides basic data on female researchers twice a year. This was used for the first time in December 2005, but RTD data had already been published earlier on a voluntary basis. From the OECD side, these are published in the “Main Science and Technology Indicators (MSTI)” and “Research and development statistics (RDS)” publications. The eight MSTI indicators present data on Headcounts of female researchers, and female researchers as a percentage of total researchers. Data are presented for the national total, business enterprise sector, government sector and the higher education sector. In the “Research and development statistics (RDS)” publication, the 4 tables include data on: female R&D personnel by sector of employment and occupation (Headcounts, and Full-time equivalent); female researchers by sector of employment and field of science (Headcounts, and Full-time equivalent). Indicators on highly skilled women are also presented every two years in the OECD

53 These data started to be collected in the 1990s, and were first published in 2002

Science, Technology and Industry Scoreboard. Twelve such indicators were included in the 2007⁵⁴ version. Data on women are also collected in the framework of the Career of Doctorate Holders project, a project launched in 2004 by the OECD in partnership with the UNESCO Institute of Statistics, and Eurostat⁵⁵.

In addition to She Figures

Ad hoc expert groups convened by the European Commission can also add valuable statistical contributions to the picture of women in science in Europe, as did the Gender and Excellence Working Group that prepared a report on women researchers' access to research funding⁵⁶. The analysis undertaken by the 16 experts involved in this group centred on the gender dimension and gender dynamics among applicants, recipients and gatekeepers of research funding, in funding processes, instruments and criteria, and the role of key funding organisations in promoting gender equality in research. As a result, the countries analysed – the same 33 countries as She

Figures – were divided in pro-active countries, which promote and monitor gender equality in research and access to research funding, and countries relatively inactive in this area. In terms of researchers' success rates in ensuring research funding, these were analysed with a breakdown by gender and discipline. No particularly systematic pattern was found, nor could a clear relation be observed between the proportion of women in a field and their chances of success in obtaining funding. However, some unfortunate gender patterns were highlighted, including the fact that women are less likely to apply for funding than men and that they request smaller amounts of money. The recommendations from the group in the field of statistics gathering include gender monitoring and publishing of qualitative and quantitative indicators, broken down by discipline and research instruments.

As regards data on women as inventors: according to a survey conducted on European Patent Office patents as a measure of innovation output in France, Germany, Italy, Netherlands, Spain and UK between 1993/1997, the percentage of female inventors was only 2.8%⁵⁷. The data on inventors were broken down in the survey by

54 B.1 New university graduates; B.2 Foreign and international doctoral students; B.4 Employment of tertiary-level graduates; B.5 Human resources in S&T; B.6 International mobility of the highly skilled; B.7 R&D Personnel; B.9 Foreign scholars in the US; B.12 Earnings by educational level. www.oecd.org/sti/scoreboard

55 www.oecd.org/sti/cdh

56 European Commission, "The Gender Challenge in Research Funding – Assessing the European national scenes" – 2009, Luxembourg: Office for Official Publications of the European Communities

57 Women were better represented in Chemicals and Pharmaceutical Patents, and much less so in Electrical / Process/ Mechanical Engineering



sex, age and education⁵⁸. More recently, under the 6th Framework Programme, the European Commission funded a project on “European Studies on Gender Aspects of Inventions” (ESGI). The project looked at 27 EU Member States, and found that in 2001-2003, 8% (head count) of inventors were women.

Data on how women are paid in the researcher profession, compared to their male colleagues, is not systematically collected. So, although the general gender pay gap in the labour market is known, the gender pay gap in the research area has not been quantified. Nevertheless, there have been a number of studies in this area demonstrating that the gender pay gap in research indeed exists, and that it reflects the labour market in general. One such study, “Remuneration of Researchers in the Private and Public Sector”, was produced in 2007 by DG Research, and collected information on the gross and net remunerations of researchers in the public and private commercial sectors. In particular, the yearly salary averages by countries are broken down by sex, showing how the income gap between women and men is still considerable⁵⁹.

Most gender disaggregated R&D data are available in the Eurostat database, NewCronos, since the reference year of 1993, but not for all Member States, because up to 2003, R&D data provision to Eurostat was on a voluntary basis. Data availability has increased significantly over the years.

1993 is set as the first reference year available for most of the raw data, but because some data were available for some countries earlier, the corresponding year is indicated in brackets.

58 Source: PatVal-EU survey (2007) – Research Policy 36 (2007) 1107-1127 – www.sciencedirect.com

59 European Commission, Research Directorate-General, “Remuneration of Researchers in the Public and Private Sectors” by CARSA, * – April 2007, Luxembourg: Office for Official Publications of the European Communities

End Note

1. She Figures 2003: Raw data (EU Member States and Associated Countries)

Data	Collected since
Number of ISCED 6 graduates by sex, 1998-2001	1998
Number of researchers in HES by sex in EU Member States (MS), Headcount (HC), 1997-2001	1993 (1990)
Number of researchers in GOV by sex in EU MS, HC, 1997-2001	1993 (1990)
Number of researchers in BES by sex, HC, 1997-2001	1993 (1990)
Number of ISCED 6 graduates by broad field of study and sex, 2001	1998
Number of researchers by main field of science and sex in HES, HC (Full-Time Equivalent (FTE) for Associated Countries (AC)), 1999 (2000 for AC)	1993 (1988)
Number of researchers by main field of science and sex in GOV, FTE, 1999 (2000 for AC)	1993 (1986)
Number of researchers by NACE category and sex in BES, HC, 1999	2000 (1999)
Number of senior academic staff (Grade A) and total number of academic staff (grades A+B+C+D) by sex, HC, 2000 (2001 for AC)	Collected via statistical correspondents
Number of Grade A academic staff by main field of science and sex in EU MS, HC, 2000 (2001 for AC)	Collected via statistical correspondents
Number of R&D personnel by sector, occupation and sex, HC, 2000	1993 (1990)
Number of applicants and beneficiaries of research funding by sex, 2001	Collected via statistical correspondents
Number of women and men on scientific boards (academies and universities)	Collected via statistical correspondents

2. She Figures 2003: Indicators

Critical mass

- Percentage of ISCED 6 graduates who are women, 2001
- Compound annual growth rate of ISCED 6 graduates by sex, 1998-2001
- Percentage of HRSTE who are HRSTC by sex, 2002
- Distribution of Scientists and Engineers by sex as a percentage of the total labour force, EU Member States (MS), 2001
- Distribution of researchers per thousand labour force by sex, HC, 1999 (2000 for Associated Countries (AC))



- Percentage of researchers who are women by sector in EU MS, HC, 2000
- Distribution of researchers by sector and by sex, HC, 1999 (2000 for AC)
- Number of researchers in PNP sector by sex; percentage women; FR; RSEs in PNP as a percentage of RSEs in all sectors in available countries, HC, 2000
- Compound annual growth rate of researchers in HES by sex, HC, 1998-2001
- Compound annual growth rate of researchers in GOV by sex, HC, 1997-2000
- Compound annual growth rate of researchers in BES by sex in EU MS, HC, 1997-1999
- Compound annual growth rate of researchers in BES by sex in AC, HC, 1998-2001

Gender differences across scientific fields

- Percentage of ISCED 6 graduates who are women by broad field of study in EU MS, 2001
- Percentage of ISCED 6 graduates who are women by broad field of study in AC, 2001
- Distribution of ISCED 6 graduates across the broad fields of study by sex in EU MS, 2001
- Distribution of ISCED 6 graduates across the broad fields of study by sex in AC, 2001
- Percentage of researchers who are women by field of science in HES in EU MS, HC, 1999
- Percentage of researchers who are women by field of science in HES in AC, FTE, 2000
- Distribution of researchers across the fields of science in HES by sex in EU MS, HC, 1999
- Distribution of researchers across the fields of science in HES by sex in AC, FTE, 2000
- Percentage of researchers who are women by field of science in GOV in EU MS, FTE, 1999
- Percentage of researchers who are women by field of science in GOV in AC, FTE, 2000
- Distribution of researchers across the fields of science in GOV by sex in EU MS, FTE, 1999
- Distribution of researchers across the fields of science in GOV by sex in AC, FTE, 2000
- Percentage of researchers who are women by NACE category in BES in EU MS, HC, 1999
- Percentage of researchers who are women by NACE category in BES in AC, HC, 2001
- Distribution of researchers across NACE categories in BES by sex in EU MS, HC, 1999
- Distribution of researchers across NACE categories in BES by sex in AC, HC, 2001

- Index of Dissimilarity and Feminisation Ratio for researchers in HES in EU MS, HC, 1999
- Index of Dissimilarity and Feminisation Ratio for researchers in HES in AC, FTE, 2000

Seniority in academia and R&D

- Feminisation Ratio among senior academic staff (grade A) in EU MS, HC, 2000
- Feminisation Ratio among senior academic staff (grade A) in AC, HC, 2001
- Percentage of academic staff who are grade A by sex. Percentage of academic staff and grade A staff who are women, EU MS, HC, 2000
- Percentage of academic staff who are grade A by sex. Percentage of academic staff and grade A staff who are women, AC, HC, 2001
- Percentage of grade A staff who are women by main field of science in all available countries, HC, 2001
- Distribution of grade A staff across the fields of science by sex in EU MS, HC, 2000
- Distribution of grade A staff across the fields of science by sex in AC, HC, 2001
- Distribution of R&D personnel across the occupations by sector and sex in EU MS, HC, 2000
- Distribution of R&D personnel across the occupations by sector and sex in AC, HC, 2000

- Scatter plot of the Feminisation Ratios of researchers and technicians in HES, all countries, HC 2000
- Scatter plot of the Feminisation Ratios of researchers and technicians in GOV, all countries, HC, 2000
- Scatter plot of the Feminisation Ratios of researchers and technicians in BES, all countries, HC, 2000

Gender equity in setting the scientific agenda

- Research funding success rates in EU Member States, 2001
- Research funding success rates in Associated Countries, 2001
- Percentage of women on scientific boards (academies and universities) in EU MS, 2001
- Percentage of women on scientific boards (academies and universities) in AC, 2001

3. She Figures 2006: Raw data (EU Member States and Associated Countries)

All data as collected for She Figures 2003, plus:

4. She Figures 2006: Indicators

Critical mass

- Proportion of women in the EU-25 for total employment, tertiary educated and employed (HRSTC) and scientists &



engineers in 2004, growth rates for men and women, 1998-2004

- Proportion of female PhD (ISCED 6) graduates, 2003
- Growth rates of PhD (ISCED 6) graduates by sex, 1999-2003
- Employed professionals and technicians (HRSTC) as a percentage of tertiary educated (HRSTE) by sex, 2004

Data	Collected since
Number of researchers by sex, Headcount (HC), 1999-2003	1993 (1987)
Number of ISCED 6 graduates by narrow fields of study and sex in natural science and engineering (400 & 500 fields), 2003	1998
Number of researchers in Business Enterprise Sector (BES) by economic activity (NACE) and sex, HC, 2003	2000 (1999)
Number of academic staff by grade and sex, 2004	Collected via statistical correspondents
Number of R&D personnel in Higher Education Sector (HES) by occupation and sex, HC, 2003	1993 (1990)
Number of R&D personnel in Government Sector (GOV) by occupation and sex, HC, 2003	1993 (1990)
Number of R&D personnel in BES by occupation and sex, HC, 2003	1993 (1990)
Total intramural R&D expenditure (GERD) for all sectors in millions of PPS, 2003	1981 (1980)

- Proportion of scientists and engineers in the total labour force by sex, 2004
- Proportion of female researchers, 2003
- Growth rates for researchers by sex, 1999-2003
- Researchers per thousand labour force by sex, 2003
- Proportion of female researchers by sector, 2003
- Distribution of researchers across sectors by sex, 2003
- Growth rates for researchers in Higher Education Sector (HES) by sex, 1999-2003
- Growth rates for researchers in Government Sector (GOV) by sex, 1999-2003

- Growth rates for researchers in Business Enterprise Sector (BES) by sex, 1999-2003

Scientific fields

- Proportion of female PhD (ISCED 6) graduates by broad field of study, 2003
- Distribution of PhD (ISCED6) graduates across the broad fields of study by sex, 2003
- Proportion of female PhD (ISCED6) graduates by narrow field of study in natural science and engineering (400 & 500 fields), 2003
- Proportion of female researchers in Higher Education Sector (HES) by field of science, 2003
- Distribution of researchers in HES across fields of science, 2003
- Proportion of female researchers in Government Sector (GOV) by field of science, 2003
- Distribution of researchers in GOV across fields of science, 2003
- Proportion of female researchers by economic activity (NACE) in Business Enterprise Sector (BES), 2003
- Distribution of researchers across economic activities (NACE) in BES, 2003
- Dissimilarity index for researchers in HES and GOV, 2003
- Proportions of men and women in a typical academic career, students and academic staff, EU-25, 1999-2003
- Proportions of men and women in a typical academic career in science and engineering, students and academic staff, EU-25, 1999-2003
- Proportion of female academic staff by grade and total, 2004
- Percentage of grade A among all academic staff by sex, 2004
- Glass Ceiling Index, 2004
- Proportion of female grade A staff by main field of science, 2004
- Distribution of grade A staff across fields of science by sex, 2004
- Distribution of R&D personnel across occupations for Higher Education Sector (HES) by sex, 2003
- Distribution of R&D personnel across occupations for Government Sector (GOV) by sex, 2003
- Distribution of R&D personnel across occupations for Business Enterprise Sector (BES) by sex, 2003

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- Research funding success rate differences between women and men, 2004
- Proportion of women on scientific boards, 2004
- Proportion of female researchers and R&D expenditure in Purchasing Power Standards (PPS) *per capita* researcher, 2003

Seniority



- R&D Expenditure in Purchasing Power Standards (PPS) per annum, *per capita* researcher by R&D sector, 2003
- Gender Pay-Gap covering whole economy, 2002 and 2004
- Gender Pay-Gap by selected occupations in private enterprise, EU-25, 2002

5. She Figures 2009: Raw data (EU Member States and Associated Countries)

6. She Figures 2009: Indicators

Data	Collected since
Number of researchers by sex, Headcount (HC), 2002-2006	1993 (1987)
Number of researchers in the Higher Education Sector (HES) by sex, HC, 2002-2006	1993 (1990)
Number of researchers in the Government Sector (GOV) by sex, HC, 2002-2006	1993 (1990)
Number of researchers in the Business Enterprise Sector (BES) by sex, HC, 2002-2006	1993 (1990)
Number of ISCED 6 graduates by sex, 2002-2006	1998
Number of ISCED 6 graduates by broad field of study and sex, 2006	1998
Number of ISCED 6 graduates by narrow fields of study and sex in natural science and engineering (400 & 500 fields), 2006	1998
Number of researchers in the Higher Education Sector (HES) by fields of science and sex, 2006	1993 (1990)
Number of researchers in the Government Sector (GOV) by fields of science and sex, 2006	1993 (1990)
Number of researchers in the Business Enterprise Sector (BES) by economic activity (NACE) and sex, 2006	2000 (1999)

Data	Collected since
Number of academic staff by grade and sex, 2007	Collected via statistical correspondents
Number of senior academic staff (Grade A) by field of science and sex, 2007	Collected via statistical correspondents
Number of academic staff (Grade A) by age group and sex, 2007	
Number of R&D personnel across occupations for the Higher Education Sector (HES) by sex, 2006	1993 (1990)
Number of R&D personnel across occupations for the Government Sector (GOV) by sex, 2006	1993 (1990)
Number of R&D personnel across occupations for the Business Enterprise Sector (BES) by sex, 2006	1993 (1990)
Number of heads of institutions in the Higher Education Sector (HES) by sex, HC, 2007	Collected via statistical correspondents
Number of applicants and beneficiaries of research funding by sex, 2002-2007	Collected via statistical correspondents
Number of applicants and beneficiaries of research funding by sex and field of science, 2007	Collected via statistical correspondents
Total intramural R&D expenditure (GERD) for all sectors (BES, GOV, HES) in million PPS, 2006	1981 (1980)

All indicators in She Figures 2006 have been retained, some with changes.

The new indicators in She Figures 2009 are as follows:

Critical mass

- Distribution of researchers in the Higher Education Sector (HES) by sex and age groups, 2006
- Distribution of researchers in the Government Sector (GOV) by sex and age group, 2006

Scientific fields

- Compound annual growth rates of PhD (ISCED6) graduates (in HC) by narrow field of study in natural science and engineering (fields 400 & 500), 2002-2006
- Evolution of the proportion of female PhD (ISCED6) graduates (in HC) by narrow field of study in natural science and engineering (fields 400 & 500), 2002-2006



- Compound annual growth rates of researchers (in HC) in the Higher Education Sector (HES) by field of science, 2002-2006
- Evolution of the proportion of female researchers in the Higher Education Sector (HES) by field of science, 2002-2006
- Compound annual growth rates of researchers in the Government Sector (GOV) by field of science, 2002-2006
- Evolution of the proportion of female researchers in the GOV Sector by field of science, 2002-2006
- Evolution of the proportion of female researchers in the BES Sector by field of science, 2002-2006
- Evolution in research funding success rate differences between women and men, 2002-2007
- Research funding success rate differences between women and men by field of science, 2007
- Proportion of female heads of institutions in the HES, 2007
- Proportion of female heads of universities or assimilated institutions base on the capacity to deliver PhDs, 2007
- Gender Pay-Gap by selected occupations in private enterprise, EU-27, 2002 and 2006
- Gender pay gap by selected occupations in public enterprise, EU-27, 2006
- Gender pay gap by selected occupations in private and public enterprise, EU-27, 2006
- Gender pay gap in private and public enterprise by age groups for the total of occupations 100, 200 and 300, EU-27, 2006

Seniority

- Proportion of women in grade A academic positions, 2000-2007
- Glass Ceiling Index, 2004 and 2007
- Proportion of female grade A staff by age group, 2007
- Distribution of grade A staff across age groups by sex, 2007
- Distribution of R&D personnel across occupations in all sectors (HES, GOV and BES) by sex, 2006

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- Compound annual growth rates of research funding success rate differences between women and men, 2002-2007

2.2 “Women in Science” in the private sector

While “She Figures 2003” revealed the situation of women scientists in public sector research, nothing was known about women in private sector research.

The first analysis – funded by the European Commission – was published in 2003, which indicated that women comprised only 15% of researchers in industry, compared to 29% in the public sector. Thereafter, the Commission began cooperating with the private sector in order to better understand the situation.

The results of the various analyses have demonstrated that profound corporate cultural change is needed in order to improve the situation of women in industrial research. While many top managers seem aware of, and concerned about the problems and obstacles encountered by their female researchers, and about the potential loss should women abandon their careers, middle management in general resists the introduction of special policies or initiatives. There is a need for training in this area, including at business and management school level, to raise awareness of the issue – drawing attention to differences between men and women as regards work behaviour and organisation, and management approaches, but also showing how such differences can enrich the organisation and improve work efficiency.

The 2000 ETAN report, “Science policies in the European Union: Promoting excellence through mainstreaming gender equality”⁶⁰ pointed out the scarcity of information available on women in industrial research. At the 2000 conference “Women and Science: Making

change happen”⁶¹, an initial analysis of their situation was presented, but with very little available data. Of the goals listed at the conference (create a culture where diversity is promoted and equality valued; encourage women to be candidates for promotion; check the gender of applicants systematically; promote positive actions including advertising campaigns; identify female candidates in annual organisational reviews; promote flexible

60 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

61 European Commission, “Women and science: Making change happen” Proceedings of the conference – 3 to 4 April 2000, Luxembourg: Office for Official Publications of the European Communities



jobs), all depended on actions that employers themselves had to take, or on Member State legislation.

Nevertheless, the need for a coherent supportive strategy and framework was taken up by the working document published by the Commission in May 2001, “Women and Science: the gender dimension as leverage for reforming science”⁶², which underlined the importance of women in science for the European Research Area. This paper provided a detailed and comprehensive report of the results achieved in the Women and Science sector, from the adoption of the Commission’s Communication on this subject in 1999 up to spring 2001 and the Council Resolution on Science and Society and Women in Science in June 2001⁶³. This document and the following “Science and Society Action Plan”⁶⁴ called for the creation of an expert group that would examine the role and place of women in private sector research, identify career patterns and examples of best practice, and formulate recommendations to increase gender equality.

In the meantime, the strategic position of European R&D and Innovation policy had been highlighted in the Lisbon Strategy as one of the main instruments for implementing

a common vision for economic and social development in Europe: to make the European Union by 2010 “the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion”⁶⁵. It also set a target of 60% employment participation by women in the labour market. The data for women in scientific and technological careers, however, were not promising. Whilst in all European countries, the participation of women in higher education was high (making up more than half of the undergraduates and, in most countries, already the majority of graduates), in public research women were still underrepresented and hardly visible. Eurostat data showed that in European countries only an average 11% of “full professorships” were held by women, and no country reached 20%. On the whole, the share of female researchers in higher education in Europe was only about 26%.⁶⁶ In order to enrich the quality and increase the quantity of European research, it was recognised that the existing barriers – that keep women from responsible positions in science, impede their career development, and prevent the higher participation of women in research – had to be removed. The importance of research and development was again highlighted at the 2002 Barcelona

62 SEC(2001)771, 15 May 2001

63 Council Resolution on Science and Society and Women in Science, OJ N° C 199, 14.07.2001, p.1

64 European Commission, “Science and Society Action Plan” – 2002, Luxembourg: Office for Official Publications of the European Communities

65 Presidency Conclusions Lisbon European Council, 23 and 24 March 2000

66 Eurostat: Women in public research and higher education in Europe, Statistics in Focus 9/2001

Summit, where the Council agreed on the need to increase the proportion of GDP spent on R&D (from 1.9% in 2000 to 3% in 2010), thereby expecting investment in industrial research to double and the number of industrial researchers to increase significantly. Nevertheless, there was no general agreement on the need for companies to increase the numbers of women working in industrial research (drawing from an under-utilised pool of female talent), no doubt due to lack of awareness of the issue of diversity and the potential benefits to companies.

In 2001, the Commission funded a study on "Women in research in the private sector"⁶⁷. The study had three main tasks: data collection in the EU countries (Member States and countries associated to the Framework Programme); collection and analysis of qualitative/quantitative studies (in and outside Europe) and collection of European-based companies' good practice; recommendation on data collection and indicators, in comparison with OECD good practice. The study results, published in

2003⁶⁸, clearly demonstrated the underrepresentation of women in industrial research (with a few striking exceptions of companies where gender diversity was a key element for innovation and economic success in terms of global competition). The study used statistics on R&D, education, employment and working conditions as well as national surveys and case studies at company level. In the data availability analysis, specific gaps were identified⁶⁹ and suggestions were made for better data collection, comparability and quality. Indicators for future benchmarking were developed (for measuring and evaluating the situation and improvements over time). The case studies made it possible to describe typical career patterns for female researchers, and provided explanations for why women prefer the public or private sector, and identified the various barriers that women could encounter in their careers.

⁶⁷ Meulders, Danièle et al (2003), Department of Applied Economics of the Brussels Free University (DULBEA). Note: Here the "private sector" includes both the Business Enterprise Sector (BES) and the Private non-profit sector (PNP) as identified and defined in the Frascati Manual, 1993

⁶⁸ European Commission, "Women in Industrial Research – Analysis of statistical data and good practices of companies", 2003, Luxembourg: Office for Official Publications of the European Communities

⁶⁹ For instance, not all countries had data on the proportion of women in industrial research, employment growth or gender gap; no information was available on training; the only information available to assess career profiles was age; the only information on the family situation was the number of children; no data were available on annual, monthly, hourly wages, except in very few national studies; no information on hierarchical sex segregation was available. Identifying women in senior grades in research was very difficult



In 2003, the high level expert group STRATegic Analysis – Expert Thematic Analysis (STRATA-ETAN) on Women in Industrial Research⁷⁰ – set up by the Commission in 2001 – published its report “Women in Industrial Research: A wake up call for European industry”⁷¹. Here again the underrepresentation of women in the private sector was highlighted: while the proportion of female researchers in the public sector was about 29%, women accounted for only 15% of industrial researchers. Among the causes for this underrepresentation, the expert group listed barriers at entry level, the perception of the climate in industry as being inhospitable (since most scientific and technological fields are male-dominated, women are subject to values and criteria that men have established for men only), lack of mentors and female role models (women scientists are underrepresented among senior managers), and difficulties in combining private and professional life.

In the conclusions, the report recognized that policies to promote the development of industrial research were by no means sufficient to achieve a greater presence of women among industrial researchers, and that a coherent gender mainstreaming approach was required, including concerted

actions to attract, retain and promote women researchers in the industrial sector. The analysis also showed that the female participation rate in industrial research was closely linked to the female participation rate among university graduates: educational segregation – both horizontal (type of studies) and vertical (doctorates) – was therefore a cause for women’s under-representation in industrial research, via occupational and sectoral segregation. The report also underlined, therefore, the importance of taking action to raise the awareness of girls about science and technical education opportunities (and the opportunities offered by the industrial sector)⁷², as well as to contribute to changing the gender stereotypes of some scientific occupations.

The foreseen analysis on company good practice⁷³ was also published in 2003, which assessed a number of interesting examples of human resource practices from a gender perspective and showed how these had often evolved from a logic or culture inherent to each company. These practices had different aims: to balance the work situation for mothers, to link family and working life efficiently, to improve time flexibility and work organisation, training, network-building, efforts in the field of recruitment, attaining a

70 Members included top executives of international companies with major research departments

71 European Commission (2003), Office for Official Publications of the European Communities, Luxembourg;

72 For the EC response to this recommendation, see Section 3.3 (f)

73 European Commission “Good Practices in companies across Europe” – 2003, Luxembourg: Office for Official Publications of the European Communities

mixed workforce, and so on. However, the most interesting practices were the “integrated programmes”, where measures to favour women were incorporated into more general human resources practices – ensuring that the gender perspective was a central and integrated feature⁷⁴.

At the official presentation of the report on Women in Industrial Research (WIR), Research Commissioner Philippe Busquin expressed special interest in the good practices implemented by one of the companies involved, Schlumberger Ltd. The CEO of Schlumberger, Andrew Gould, was asked to develop and lead an initiative, in cooperation with other CEOs, which could set an example for other companies. Consequently, a group of company human resources managers, fully supported by their CEOs, was organised, with the aim of drafting a position paper to be presented at a conference that the Commission was planning for later that year. This paper focused on the importance, as a business case, of the promotion of gender diversity in industrial R&D, and then concentrated on some major issues: high school and university involvement (raising awareness, opening doors, recruitments), dual careers, career development up to top positions (targets), and supportive actions (networks, mentoring). In all these domains, companies

would set out their practices and propose monitoring schemes, in order to sustain the effort and measure progress regularly.

The 2003 conference on “Women in Industrial Research – Speeding up changes in Europe”⁷⁵, held in Berlin, was opened by Commissioner Busquin saying that Europe would need 700,000 additional researchers within the coming years to realise the 3% R&D target set by the European Council in Barcelona in 2002. Industry already was employing the majority of EU-based researchers and there had been a major increase in the employment of women researchers and engineers in industrial R&D in those years (33% from 1995 to 2000). But the proportion of women researchers in industry was still only 15% in the EU (ranging from 9% in Austria to 28% in Ireland, and for the associated countries from 17% in Switzerland and the Czech Republic to 55% in Latvia). The workshops during the conference looked at: how to motivate more young women to pursue careers in industrial research (via companies, schools, universities); what can companies do to promote women (culture of research); what can be done to increase the participation of women in innovation; what needs to be done to have more gender-differentiated

74 For the EC response to this recommendation, see Section 3.3 (g)

75 European Commission, “Women in Industrial Research – Speeding up changes in Europe – International conference”, conference proceedings – 2005, Luxembourg: Office for Official Publications of the European Communities



comparable data at company level; the relevance of role models, networking, mentoring in getting women to the top. The above-mentioned position paper, “A wake-up call from CEOs”, was also discussed during the Berlin conference. The Paper contained the commitment by a group of leading international companies with a prominent R&D role to enlarge the reservoir of talent in Europe, to double the number of women in science and engineering, and to ensure that their skills are used by industry to the best advantage. The companies committed themselves to cooperate in placing this issue on the public agenda: “We sense an urgency to tackle this problem, but we also need to make a commitment to longer-term strategies We are working together as a group to make an impact. The challenge is an exciting one; addressing it successfully will enrich and diversify our corporate cultures. We are committed to sustained action on all of these initiatives. We are aware that these actions will demand investment; yet to do nothing would cost much more.” The actions proposed were: Taking a Stand (CEOs to speak publicly about their company’s approach); Sponsoring a Role Model (companies to create strategic partnerships with the education sector to encourage women in science and engineering); Promoting Change (companies to internally promote awareness, initiate specific company measures, define strategic goals and monitor progress, and cooperate with other companies and

universities); Making Use of Existing Programmes (companies to take full advantage of existing national and European programmes designed to support women in industrial research)⁷⁶; Analysing the Business Case (and strengthen public communication).

In 2003, the European (Competitiveness) Council adopted a resolution on “Equal participation in the knowledge society for growth and innovation”⁷⁷, paying special attention to employment, research, innovation and entrepreneurship. It invited the Member States to “foster greater participation of women in research based activities and business, as a tool for enhancing innovation; encourage the creation and ongoing development of enterprises by women, especially in knowledge-intensive sectors”. It invited the Commission to report on the progress of the Women in Industrial Research (WIR) initiative in the context of research, development, innovation and entrepreneurship.

In 2005, the Commission replied to this request by including in its staff working document titled “Excellence and Innovation – Gender Equality in Science”⁷⁸, the following priorities: “to enhance and analyse in-depth

⁷⁶ EC and National Programme documentation, Example: Marie Curie Actions in the Sixth Framework Programme of the European Commission (<http://europa.eu.int/mariecurie-actions>)

⁷⁷ JO 2003/C 317/03 of 30.12.2003

⁷⁸ SEC(2005)370

the role of women in the areas of innovation, entrepreneurship, patent creation, technology and ICT development”. In particular, it proposed that the total number of female researchers in industry should be doubled by 2010. To support this, it also proposed a target for the number of women graduating in engineering: a third of all graduates in engineering studies should be women by 2010. Studies on the situation of women in engineering would be promoted.⁷⁹ In addition, good practices in companies and universities were to be identified and adequate information strategies and coordination structures to support these changes would be put in place.

To implement these commitments, in 2005 the Commission organised a new expert group on “Women in Science and Technology (WIST)” to analyse the business case of gender diversity in industrial research, which was one of the main actions indicated in the CEO position paper. A dozen multinational companies – leaders in various sectors – agreed to take part in the analysis. They shared the conviction that attracting, developing and employing both men and women in science and technology require a significant cultural change which is essential to innovation, growth and competitiveness. A group of experts were invited to analyse, from their different viewpoints (economics, sociology, cultural studies, and business

management), the information provided by the companies, in order to measure and assess the impact of gender diversity in research team productivity.

The final results, published by the Commission in the “Women in Science and Technology: the business perspective” report⁸⁰, were positive even if not “definitive”: too many variables hindered the unambiguous evidence for the premise that gender diversity improved research team performance. The study showed that mixed teams usually outperformed homogeneous groups, but this was not a rule. Something else was influencing the outcomes, and this was identified as the quality of the management. In order to make diversity productive, concluded the report, major investments in the quality of gender management – or more generally, in diversity management – were needed. This meant that managers had to be trained in acknowledging, respecting and better using diversity in order to make diversity productive. In order to introduce the results of the WIST report to a wider audience, a conference was organized in Vienna in 2006 by the Commission, together with the Austrian EU Presidency. A number of companies presented the best practices that they use to address the lack of a sufficient pool of talent

79 For details of Commission funding, see Section 3.3

80 European Commission, “Women in Science and Technology: the Business Perspective” – 2006, Luxembourg: Office for Official Publications of the European Communities



from which to hire their highly trained staff. The shortage of young candidates, both women and men, from engineering and scientific disciplines, together with so many women dropping out of scientific and engineering careers, creates a serious shortfall in researchers. The leaky pipeline must be repaired.

Further issues arose at the conference: How to assess the efficiency of measures taken by R&D companies to attract and retain women and men as engineers and scientists? How much do these policies influence the choice to accept a job and/or to stay with the company? Consequently, a new working group was created in 2007 to address these issues (called the “WIST 2 Working Group”, as a logical follow-on from the WIST group). A larger number of companies participated in this group than had with the original group, and seven experts were involved in qualitative and quantitative analysis to find out how to reduce the leaky pipeline and how to build a business case for work-life balance. No simple answers to these questions were found but the main message was that merely offering work-life balance practices was not

enough. The organizational culture had to be truly supportive of the utilization of these policies. If the message was negative, or mixed, many would not utilise what was on offer, and those who did, were likely to fear the consequences. Science and technology companies needed to keep on creating, promoting, and supporting custom-made work-life balance practices, but should pay extra attention to implementing these in a more professional way, as quality or safety management. The report concluded that it had become increasingly clear that the most competitive companies were the ones which could attract, motivate, and retain the best talents – globally, and that the design and implementation of effective work-life balance policies would make a difference.⁸¹

With 2009 being marked by the economic crisis, the WIST group’s activities have been cut back. However, a new round is expected to be launched in 2010 with a possible plan to analyse the effects that the crisis has had on the policies implemented by companies to attract and retain women in science.

81 See also Section 4.3 a)

2.3 Policy forum: the Helsinki Group on Women and Science

The Helsinki Group (HG) is an advisory body set up by the European Commission in response to the 1999 Council Resolution to provide a political forum to discuss the issue of «women in science». The members are representatives of all member states and countries associated to the Framework Programme – comprising ministry representatives, active scientists and gender experts. The HG has been meeting regularly twice a year since 1999. A total of 32 countries are now represented, with very different approaches taken: ranging from countries which have set up women and science units that support the HG representatives, to other countries that delegate scientists as representatives who have little influence over policy decisions. This range makes it more difficult to agree on common positions and actions, and the frequent turnover among representatives makes follow-up of activities difficult. Nevertheless, over the ten years of activities, the HG has achieved considerable success: the compilation of national reports; the sub-group of Statistical Correspondents providing the basis for the She-Figures data collection; participation in the policy dialogue that led to the production of various studies and reports; supporting the activities on networking that led to the creation of the European Platform of Women Scientists.

The Helsinki Group presented its vision for future activities of the HG to the new Commission at the end of 2009 (Position Paper: Gender and Research Beyond 2009).

In its 1999 Communication “Women and Science: mobilising women to enrich European research”⁸², the Commission proposed the establishment of “a group of national civil servants made up of representatives of all the Member States involved in promoting women in scientific research”, which would enable the Commission “to begin a dialogue among the

Member States, leading to an exchange of experiences and a joint assessment of the situation and the measures implemented in each of the Member States and at European level. One of the major common emphases would be on improving not only the indicators but also the assessment and monitoring process.” The Research Council endorsed the Commission’s views in its Resolution of 20 May 1999 on Women and Science⁸³, by inviting Member States to: “actively engage

82 Communication “Women in science: Mobilising women to enrich European research” – COM99/76 – February 1999

83 OJ 1999/C 201/01



in the dialogue proposed by the Commission in its communication by exchanging views on policies pursued at the national level so as to be able to analyse the situation and make a joint assessment of ongoing policies, taking into account benchmarking and best practice in Member States. Research institutes, higher education organisations and private enterprises should be involved in this process”.

After having decided to extend this group of national civil servants to all countries associated to the 5th Framework Programme and after having received appointments from all Member States and Associated States⁸⁴, and Iceland, Israel and Norway, the Commission convened on November 29 & 30, 1999, the first meeting of this group of national civil servants on “women and science”. As the first meeting took place in Helsinki, during the Finnish Presidency of the European Union, the group became known as the “Helsinki Group on Women and Science”.

The report on women and science in the EU by the ETAN working group⁸⁵ was presented and discussed during this first meeting, and

the work programme and mandate of the Helsinki Group was also decided. In addition, each member was requested to produce a national report, including any measures that had been adopted to promote women in science.

Since the Research Council’s 1999 Resolution invited the Member States to promote equal opportunities in research by all appropriate means at national levels, each member of the Helsinki Group was invited to promote women in science at national level, by establishing links with existing networks of women scientists; creating a national steering group on “women and science” (with representatives from the ministries for research, equal opportunities, research councils, research organisations, industry and women’s networks); launching/continuing the debate on women and science at national level (on the basis of the ETAN report); examining the possibilities of initiatives in the policy field (e.g. achieve a better gender balance in scientific committees, instigate “best practice” policies in the employment of scientists, support the idea of role models and mentoring programmes, set up panels with national research councils to monitor application success rates, establish “women in science” units where they do not already exist).

In addition to providing information on national measures, the Helsinki Group members were also asked to jointly develop

84 With the exception at that stage of Poland and Slovenia; Liechtenstein having decided not to participate

85 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

a way of assessing the efficiency of these measures. This required the development of common tools, naturally including the collection of sex-disaggregated statistics on women in science and the production of gender(ed) indicators, but also agreeing on common review procedures on the basis of the different methods implemented at national and European levels. In order to concentrate on statistics and indicators, the Helsinki Group's Statistical Correspondents sub-group was established in 2001. Their work resulted in the publication of "She Figures 2003", which contained data and indicators on Women and Science in Europe (see Section 2.1 for further details).

During the second meeting of the Helsinki Group, held in Brussels 22-23 June 2000, participants agreed on the structure of their national reports that were to be delivered for the third meeting in December 2000, containing up-to-date information (if available) on: the national situation; the policy framework for women and science; measures adopted to promote the role of women in science; statistics presenting the situation in the country; networks on women and science; involvement of the private sector in promoting women in science; tools established to assess the impact of those measures; some case studies (examples of success/failure); future perspectives at national and EU level. Most national reports were ready for the third meeting held in Brussels 12-13 December 2000, and from

these reports Prof. Teresa Rees⁸⁶ from Cardiff University was tasked to produce a European report on national policies promoting women in science, and also to make recommendations regarding policies and research programmes at national and EU level.

At the 2000 Lisbon Summit, the Council announced a transition to a "knowledge based economy", and called for the Council and the Commission, together with the Member States, "to take the necessary steps as part of the establishment of a European Research Area to encourage the development of an open method of co-ordination for benchmarking national research and development policies and identify indicators for assessing performance in different fields, in particular with regard to the development of human resources"⁸⁷. This emphasis on benchmarking was reflected in the role of the national steering committees on women and science that most of the Helsinki Group members had set up by the time of their December 2000 meeting⁸⁸.

The national steering committees were to play an important role in the benchmarking process by supporting the members of the

86 Rapporteur of the ETAN report

87 Presidency Conclusions Lisbon European Council, 23 and 24 March 2000

88 With the exception of Denmark, Germany, Luxembourg and the UK for the Member States, and Bulgaria, Latvia, Romania and Slovenia for the Associated States



Helsinki Group in establishing guidelines and identifying targets and parameters to be improved, as well as monitoring the implementation and the follow-up of the activities. These committees, on the basis of their country situation, could verify what kind of targets could be achieved in their country, identify the difficulties that certain activities could have encountered and contribute with their national experience to draw up a common action plan. The national steering committees were also important for the implementation of the benchmarking process and for establishment of links among the different actors of the women and science activity at national level (i.e. policy makers, representatives of research community, networks). Furthermore, these committees could encourage scientific institutions to integrate gender mainstreaming in their organisations. After an initial period of activity, however, a number of these steering committees became inactive, while in other countries, coordination of women and science activities was included in the operation of other national bodies.

The task of the Helsinki Group itself as the guarantor of the quality of the benchmarking process involved: taking decisions on the programming of the benchmarking activities and on the provision of the necessary mechanisms to implement them; establishing guidelines and identifying targets to be improved; discussing and evaluating the results of the benchmarking exercise and

the feasibility of transferring best practices; reporting and presenting the results of the benchmarking exercise at regular intervals.

During the Helsinki Group's fourth meeting in May 2001, and on the basis of the first draft of the report on National Policies on Women and Science in Europe (author T. Rees), the delegates decided that the report should present a critical assessment of the many and diverse approaches developed by the 30 countries of the Helsinki Group. This was to help each delegate to situate her/his country in a wider context, to identify best strategies to promote women in science and to convince policy makers on the next steps to be taken, according to the situation of female scientists in each country. The conclusions of this analysis would result in work packages, representing a proposal for an action plan for the Helsinki Group (which was adopted during the fifth meeting in December 2001):

Work Packages for the Helsinki Group, 2001

Work package 1: Establish the Helsinki Group on firmer basis and increase cooperation among Helsinki Group delegates

Work package 2: Research

- review, collate and publish national qualitative research studies on women and science
- learn from examples of changes in pedagogy and content of science courses
- research the work of the Women and Science National Steering Committees to report best practice
- commission a parallel ETAN report on women in science in the private sector
- commission a parallel ETAN report on the situation of women scientists in the Eastern and Central European countries
- support research of gender experts on women and science and dissemination of research results from projects

Work package 3: Evaluation measures and assessment tools

- develop evaluation measures for positive action measures and gender mainstreaming
- share examples of best practice in agenda setting, raising awareness, special projects, and support for equal opportunities; gender mainstreaming and gender equality indicators
- share experiences of developing assessment tools
- monitor cases such as the backlash following the Tham Professorships in Sweden
- sustain debate about legality of positive action measures

Work package 4: Statistics and indicators

- continue path-breaking work on statistics with Women and Science Unit
- lobby for national legislation on sex-disaggregated statistics, where appropriate
- have annual updates on statistics on women in science provided through the statistical correspondents of the Helsinki Group
- continue developing gender equality indicators in science

Work package 5: Shaping Science Policy



In May 2001 the Commission reported⁸⁹ to the European Parliament and the Council on results achieved since the adoption of its Communication on Women and science in 1999, as requested in the Council Resolution of May 1999. The achievements of the Helsinki Group were acknowledged as being: establishment of steering committees in each country, and in some cases, establishment of new administrative structures, to support the promotion of women in science; consolidation of a policy framework on women and science in some countries; interaction between different public policies: equal opportunities, research, education employment and structural funds; collection of baseline statistics on the presence of women in scientific research; production of national reports; development of a strategic collective capacity to promote the “women and science” issue across the research policy process at national and EU level. In addition, the members of the Helsinki Group were said to have a global overview of the measures undertaken in the different countries to promote women in science.

In June 2001⁹⁰ the European Council invited Member States and the Commission to support the Helsinki Group in continuing its work, and to deepen cooperation to promote

the role of women in European research. In his Foreword to the proceedings of the 2001 “Gender and Research” conference⁹¹, Commission Busquin stated that the “Helsinki Group is proving to be a vital and dynamic contributor to the women and science debate, and its statistical correspondents are playing an important role as regards data collection and the development of gendered indicators”. At the end of 2002, the Science and Society Action Plan confirmed that the Helsinki Group “will continue to provide the framework for pooling national policy experiences and exchanging good practices” but also “will set up a comprehensive strategy for longer term cooperation”.

The call by the Helsinki Group to prepare an ETAN-style report on the situation of women in science in Central and Eastern Europe was answered by the Commission in 2002 when the ENWISE group was created and tasked with preparing such a report⁹². And the call for an ETAN-style report on the situation of women in industrial research was answered in 2003, with the creation of the

89 Commission Staff Working Paper “Women and Science: the gender dimension as a leverage for reforming science” – SEC(2001) 771 – 15 May 2001

90 Council Resolution “Science and Society and Women and Science” – OJ 2001/C 199/01 – 26 June 2001

91 European Commission, “Gender and Research. Conference Proceedings”, 2002, Luxembourg: Office for Official Publications of the European Communities

92 European Commission, “Waste of talents: turning private struggles into a public issue – Women and Science in the Enwise countries” – 2003, Luxembourg: Office for Official Publications of the European Communities

STRATA expert group, and their subsequent report.⁹³

In June 2002, the above-mentioned report “National Policies on Women and Science in Europe”⁹⁴ was finalised and published. Written by Prof. Teresa Rees on the basis of national reports prepared by Helsinki Group members, it described the categories of measures developed in the 30 European countries represented in the Group at the time to promote women in science: networking, quotas and targets, role models and mentoring, earmarked chairs, research funds and prizes. It included an analysis of national legislation which mainstreamed gender issues in other policies, and professional/private life balance policies. The report also indicated the future priorities for the Helsinki Group: to enhance the opportunities of the members to continue to work at a transnational level, and to create more opportunities for international cooperation. This could be obtained by facilitating networking among members, their committees, their Women and Science units; supporting gender studies research (to understand better the gendering of science, scientific education, scientific

careers); developing and using a series of tools (to evaluate and monitor equal treatment, positive actions, and gender mainstreaming measures designed to promote gender equality in science and scientific careers).

Support by members of the Helsinki Group was instrumental in taking the first steps to establish an ERA-NET initiative⁹⁵ on Women in Science policies. In 2003, a proposal called “Preparatory project: European Policy Cooperation for Women in Science – EOWIN” was submitted and obtained funding to perform the preparatory activities to create an ERA-NET. The aim was to use the ERA-NET scheme as a means of coordinating women and science policies and programmes at European level. Its flexibility would have allowed partner countries to work towards implementing joint programmes, starting with a systematic exchange of information and the development of strategic activities. It also foresaw the possibility of starting out with a small group of countries and extending the number of partners, as other countries were meant to be ready to become involved. The project – and the consequent ERA-NET – was to respond to the needs highlighted by the 2002 ETAN report, and the 2003 report on women in industrial research. The Helsinki

93 European Commission, “Women in Industrial Research – A wake-up call for European industry” – 2003, Luxembourg: Office for Official Publications of the European Communities

94 European Commission “The Helsinki Group on Women and Science – National Policies on Women in Science in Europe” – 2002, Luxembourg: Office for Official Publications of the European Communities

95 ERA-NET scheme: Supporting the Cooperation and Coordination of Research Activities carried out at National or Regional Level



Group was to help bring new partners into the planned network. Unfortunately, the support activity did not lead to the expected ERA-NET and the initiative was not realised.

In 2005 an initial analysis⁹⁶ provided information on the policies and strategies implemented at national level. It showed that gender equality policies had become an important issue in all EU Member States, being mainly embedded in equal treatment legislation. In order to mainstream policies promoting gender equality in science, many countries had established structures such as national committees, and units dedicated to women in science in relevant government departments. Some countries had established national resource and coordination centres for women in science activities (CEWS – Centre of Excellence Women in Science, and Kompetenzzentrum – Women in Information Society and Technology – were established in Germany in 2000, the National Contact Centre for Women and Science was established in the Czech Republic in 2002 and the National Resource Centre for Women in SET was established in the UK in 2004) (see End Notes, Table 1).

In its meetings since 2005, the Helsinki Group has continued to be a useful forum for

the exchange of information on national activities and good practice, and for its input on specific publications. It has provided comments and feedback on the implementation of the Framework Programmes, on the specific programmes related to “women and science” activities, and on the gender dimension in other components of the Framework Programmes. In particular, the HG has been interested in the work done by the Commission to promote the gender dimension in research – participating in reflections on the Gender Impact Assessment (carried out on the 5th Framework Programme), and especially on the Gender Action Plans in the 6th Framework Programme, and the subsequent Gender Monitoring Studies on the 6th Framework Programme (see Section 4.3 b) for details on these). In 2003, some members of the Helsinki Group even submitted a proposal to the 6th Framework Programme (an initiative focusing on the situation of women scientists in Mediterranean countries), but this was not accepted for funding.

The Group has commented on the women and science actions in the Science and Society Action Plan (statistics and indicators, recommendations of the WIR expert group, launch of the expert group on women in science in Central and Eastern European countries and the Baltic States – the “Enwise” group). The HG has especially supported the creation of networks for women scientists, and has been active in following the various

96 European Commission, “Women and Science – Excellence and Innovation – Gender Equality in Science” – SEC(2005)370

stages leading to the formation of the European Platform of Women Scientists (EPWS). The Group has also provided feedback on a number of publications and activities, such as the reports presented by expert groups on women in industrial research (WIR), women in decision making positions (WIRDEM) and the gender challenge in research funding. In particular, members of the Helsinki Group were actively involved in the preparation of the 2008 report "Benchmarking policy measures for gender equality in science"⁹⁷, which updates the 2002 Helsinki Group report on national policies in women and science. The 2008 report includes a new table on policy measures, showing some progress in those countries reflected in the 2002 table, and the situation in the newly included countries (see End Notes, Table 2).

In April 2007, the Helsinki Group renewed its mandate, specifying six types of activities to be included (see End Note) and – at its 19th meeting in November 2008 it presented a

related strategy paper to the Commission (see End Note) covering contents, priorities and methods/instruments to be used.

In May 2009, at the conference organised in Prague: "Changing Research Landscapes to make the most of human potential – 10 years of EU activities in Women and Science, and BEYOND", the Commissioner Janez Potočnik raised the issue of the future of the Helsinki Group. He emphasised the important role of the Group as an advisory body, especially in the initial years of the European Commission's activities in the field, and asked the Group to review and perhaps redefine its role so that it could provide effective support to the Commission in its continued strivings for gender equality in science and technology.

During their 10th anniversary meeting, held in Brussels on 23-24 November 2009, the members of the Helsinki Group adopted a Position Paper to be sent to the new Commission. This Position Paper (see End Note) includes recommended actions for both the Commission and the Helsinki Group, and thereby renews the commitment of the Helsinki Group to gender and research issues for the future.

⁹⁷ European Commission, "Benchmarking policy measures for gender equality in science" – 2008, Luxembourg: Office for Official Publications of the European Commission



End Note

Table 1: National policies to promote gender equality in science (2004)

Equality Measures in Science	EU-Member States (25)									
	BE	CY	CZ	DK	DE	EE	EL	ES	FR	IE
Equal treatment legislation (general)	X		X	X	X	X	X	X	X	X
Commitment to gender mainstreaming	X	X	X	X	X		X	X	X	X
National Committee on Women & Science	X	X	X	xx	X	X	xx	X	X	X
Women & Science Unit in Research Ministry					X		X5		X	
Publication of Sex-disaggregated Statistics	X	X	X	X	X	X	X	X	X	X
Development of Gender equality indicators	X4			X	X		X		X	X
Gender balance targets: public committees	X2			X	X		X		X	X
Gender balance targets on university ctees		X		X	X				X	
Gender Equality Plans in Univ. & Research I.	X4			X	X				X	X
Gender ² Studies & Research at Universities	X	X	X	X	X	X	X	X	X	X
Programmes on W&S, special funding available					X		X		X	xx
Nationwide Centres on Women & Science			X		X					

***Source:** Information provided by the members of the Helsinki group & EOWIN, Summer 2004, DG RTD, UNIT C4

xx = in preparation

X1 = only BE French-speaking

X2 = only BE Flemish-speaking

X3 = not for industrial R&D

X4 = set by certain universities

X5 = person only responsible for W&S

X = yes blanc cell = no

² or women studies/research

IT	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X		X	X			X	X	X	X	X		X	X	X
X		X		X	X		X	X	X	X	X	X	X	
X							X							X
	X	X	xx	X	X	X	X		X	X	X	X	X	X3
X	X			X	X		X		X	X		X	X	X
												X	X	X
						X4	X					X	X	X4
X			xx			X4	X					X	X	
X	X	X	xx	X	X	X	X		X	X	X	X	X	X
X	xx	xx			X	X	X			X				X
														X



Table 2 National policies to promote gender equality in science (2008) (EU Member States 27)

Legend: X = Yes, already in Rees (2002); X = Yes (new), crosshatched= partially; blank cell = No
 “Partially” means: for *Mainstreaming*: the country might be committed to gender mainstreaming in official documents but does not have special plans for implementing it; for *Targets*: it means that one, but not all, scientific body/ies might have targets; for *Sex-disaggregated Statistics*: it means that some, but not all, data are sex-disaggregated; for *Networks*: it means that there is only one (or very few) network/s for women in science; for *Women’s/Gender Studies*: see individual country’s explanation in policy reports; for Gender Equality Plan in Italy there are Equal Opportunity Committees in Universities but not necessarily plans as such

Measure / Country	AT	BE	BG	CY	CZ	DK	EE	FI	FR	DE	EL	HU
1- Equal treatment law	x	x	x	x	x	x	x	x	x	x	x	x
2- Ministry for Women's affairs./ Statutory Gender Equality Agency	x	x	x	x	x	x	x	x	x	x	x	x
3- Commitment to Gender Mainstreaming	x					x	x	x	x	x		
4- Women in Science Unit	x				x				x	x		
5- Quotas	x	x						x			x	
6- Targets	x							x		x		
7- Sex-disaggregated statistics	x	x	x	x	x	x	x	x	x	x	x	x
8- Networks for women in science	x	x				x		x	x	x		
9- Mentoring for women in science	x							x		x		
10- Women Studies	x	x	x	x	x	x	x	x	x	x	x	x
11- Gender Studies	x	x	x	x	x	x	x	x		x	x	x
12- Gender equality plan in universities	x					x		x		x		
13- Special funding available to women in science	x							x	x	x		

	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	x	x	x	x	x		x		x			x	x	x	
	x	x				x						x	x		x
		x											x	x	
													x	x	x
		x	x	x		x	x		x	x	x	x	x	x	x
	x						x			x			x		x
	x													x	x
	x	x	x	x		x	x	x	x	x	x	x	x	x	x
	x	x	x	x		x	x	x	x	x	x	x	x	x	x
	x					x	x						x	x	x
	x						x						x	x	x



MANDATE of the Helsinki Group (renewed in 2007)

1. To provide contributions and advice to the Commission on developing policies, on programme documents, and on studies
2. To exchange experience and inform the Commission about policies and measures implemented at local, regional, national and European levels to promote gender equality in science on the following themes:
 - a. Enhancing the participation of women in science (Strategy: point A), including work/life balance issues (Strategy: point B)
 - b. Integrating the gender dimension in research (Strategy: point C)
3. To support the Commission in the preparation of comparable European statistics and indicators on gender equality in science (Strategy: point E)
4. To develop joint activities at European level on behalf of Ministries and bodies in charge of national policies in order to stimulate a coordinated approach to policy development aimed at gender equality in science (Strategy: points F, G, H, I)
5. To create awareness at national level on national and European activities related to gender equality in science to other Ministries or Government Departments involved in research, including through the national Steering Committees where these exist (Strategy: points F, G, H, I)
6. To encourage the participation of women scientists in the Framework Programme and in the European Research Area (Strategy: point D).

STRATEGY PAPER for the Helsinki Group

CONTENTS

(A) Enhancing the participation of women in science

- Promoting gender awareness and fairness
- Increasing the participation of women in science and in industrial research in Member States
- Formulate **targets** for the participation of women focussing on areas where women are seriously under-represented, and in particular increase significantly the number of women in leading positions, with the aim of reaching, as a first step, the goal of at least 25% in the public sector as an average in the EU, as well as boost their participation in industrial research and technology
- Improvement of the participation of women especially in decision-making positions by strong coordinated equal opportunity policies and actions (see WIRDEM)
- Increasing the participation of women in science to improve the scientific quality (see working group excellence just set up)
- Development of transparent and free of gender bias evaluation and selection procedures (see WIRDEM report)
- Enhancing the visibility of women in science: role models, books exhibition.

(B) Including work/life balance

- Development of working conditions and cultures in academia as well as in industry towards a more inclusive environment allowing women to fully develop their potential
- Continue contributing towards working conditions which allow both women and men researchers to combine family and work, children and career; appropriate provisions for parental leave should be put in place in particular
- Development of procedures to eliminate all forms of discrimination and disadvantages for researchers, especially those linked to parenthood
- Ensuring the necessary flexibility of the workforce by integrating the aims of mobility as well as stability regarding research career.

(C) Integration of gender dimension in research

- Reinforce gender research (including analysis of the changing roles and life plans of women and men in Europe)
- Reinforce the gender dimension in research



- Implementation of the gender-aspect as horizontal and vertical axis in other work-programmes
- Monitor the attrition rate with regard to women researchers and analyse the causes.

(D) Encourage participation of women scientist in the Framework Programme

- Continue improving the participation of women as researchers, evaluators, experts and advisory board members in the Framework Programmes
- Monitor the progress and report on it.

PRIORITIES

The following goals/ should be pursued primarily:

1. Formulate **targets** for the participation of women focussing on areas where women are seriously under-represented, and in particular increase significantly the number of women in leading positions The targets should be both challenging and realistic
2. Reinforce gender research and the **gender dimension in research**, including analysis of the changing roles and life plans of women and men in Europe. Implementation of the gender-aspect as horizontal and vertical axis also in other work-programmes
3. **Gender watching brief** of EU policies: monitoring **FP7**. The monitoring should be linked to the upcoming mid-term assessment of FP 7. The HG must have the opportunity to contribute
4. **Presentation and documentation of the results of gender research projects funded by the Commission (FP 6, FP 5 ...) in order to enhance the visibility**
5. Analyse the **European Charter for Researchers and on the Code of Conduct for the Recruitment of Researchers** (7321/05 RECH 57 – C(2005) 576 final) and take into account when formulating and implementing the working plans, in particular. Training, mobility, career development of researchers have to be designed in a gender sensitive way. The HG should give an opinion on the Charter for Researchers and Code of Conduct
6. **Better use, improvement and interlinking of existing instruments:** platforms, data, information tools
7. **Create Network of the Networks.**

METHODS/INSTRUMENTS

To tackle the contents the following methods and instruments should be applied:

(E) Statistics

- Further development of sex disaggregated data and indicators on the participation of women in research, including the collection of yearly recruitment statistics
- Further development of the Gender Watch System by establishing regular progress reports, including the gender action plans
- Monitoring of the participation of women in FP 7: statistical data analysis, development of specific strategies
- Underline the importance of the relation between HG members and their statistical correspondents. Officially, these are a sub-group of the HG. It is useful to keep these contacts strong to achieve the best national statistics.

(F) Information policy – Gender on the Agenda

- Continuous information of the HG about gender-sensitive activities of other units in Directorate L: Science, Economy and Society, the DG Research and other DGs. (One person of the Unit L4 «Scientific Culture and Gender» would be in charge of providing continuous reporting on these issues.)
- The activities of the HG will be systematically communicated (via Unit L4) to the other units of the Directorate L, to the DG research and other DGs
- Information about the HG will be enhanced (via website, newsletter, etc.)
- Implementation of information exchange on the national level. (The information about national activities concerning the implementation of the working plan as well as new impulses and ideas has to be communicated systematically between the HG, the other Units in the Directorate L, the DG Research as well as other DGs.)
- Develop a better cooperation between the different members of the HG and the Unit, with other national delegates in other Units of DGs (e.g.: via : programme committees)
- Disseminate information about HG members themselves: their area of expertise, and their participation in networks or forums.

(G) Reporting

- Biennial reports on the achievements and future work to be done at EU and national level for each item of the working plan (e.g.: Mobility of researchers and career development – implementation report 2006)



- The reporting activity should be linked to the upcoming mid-term assessment of the FP7. It would be useful for the HG to contribute. The review is planned for 2010 so the Commission should start working by mid-2008 on the subject.

(H) Networking

The implementation of gender aspects has to be considered as an horizontal task which has to be incorporated successively within the Directorate L: Science, Economy and Society and other DGs (e.g. Department responsible Human Resources and Mobility):

- Cooperation with the Gender Institute has to be defined as to its content and organisation. Benefits for both organisations have to be made visible, duplications avoided and strategies and action plans coordinated
- Cooperation with the EPWS has to be defined as to its content and organisation. Benefits for both organisations have to be made visible, duplications avoided and strategies and action plans coordinated
- Cooperation with the ESF
- Cooperation between the different members of the HG and the Unit
- Cooperation between the members of the HG with other national delegates in other programme-, comities-, expert groups etc.
- Feed back of the information gathered at HG meeting in the Ministries on national level.
- Developing of dissemination instruments on national level
- Use of the existing instruments for the daily communication.

(I) Meeting-structure

- The meetings take place twice a year. One of these meetings should be organized by the member state holding the current presidency in cooperation with the Unit and if possible with other HG members from the region
- Preparation of the HG meetings should be done by a small group in cooperation with the Unit L4. Organisation of the small groups: time-limited (max. two years); approx. five members; rotation principle by respecting continuity; two old members «continue» in the new small group; regional aspect may be considered
- During the meeting: information, exchange, debate on specific content and decision-oriented discussion (e.g.: receiving policies update ahead of meetings. Discussions would then focus on these particular subjects.)

- Consider the policy agenda more systematically in the next meetings (ERA Green Paper). HG members can influence their national positions, but could also give comments as a group. These topics should be given more importance in the future.
- Presentation of national initiatives
- Composition of the HG: both sexes, women and men, should be represented in the HG. National representatives: The scientists from Universities and research institutions should be well connected to the civil servants from Ministries or government
- New members: Systematically introduce the work objectives of the HG (European decisions, directives etc.) and all the publications by the HG, current work topics, structure and functioning of the EU institutions and DG Research in particular has to be offered.



GENDER AND RESEARCH BEYOND 2009

POSITION PAPER by the Helsinki Group on Women in Science

The Helsinki Group on Women in Science (HG) is a group of national representatives (policy makers and gender experts) from the 27 EU Member States and the states associated to the Framework Programme. The Group was established by the European Commission in 1999 and meets twice annually for a dialogue with the Commission on ways to address the underrepresentation of women at all levels in scientific research, and also to exchange national good practice on promoting gender equality in research.

This Position Paper complements the Helsinki Group's Mandate on Women in Science and its Strategy Paper (2008). Having reached the 1999-2009 milestone of 10 years of Women in Science activities by the European Commission, and in response to the need to re-launch the activities of the Helsinki Group, as expressed by the Research Commissioner Janez Potočnik¹, the Group wishes to present to the new Commission a Position Paper on gender equality for the benefit of scientific and technological research in the European Research Area.

1. Importance of top-level support for change

Top-level support is needed for the introduction of gender equality measures, for legislating change, and for paying attention to the role of gender in research. However, the pre-condition for such top-level support is first to raise awareness on the importance of the issue of gender equality in research. Thus, both DG RTD and the members of the Helsinki Group must mobilise resources to raise awareness on women in science, and thereby influence policy making.

1. At the conference on "Changing research landscapes to make the most of human potential: 10 years of EU activities in Women and Science, and BEYOND, Prague, 14-15 May 2009. The structure for this Position Paper is based on the main conclusions of the conference.

The HG invites the European Commission to:

- acknowledge the **relevant role of the Helsinki Group** in contributing to **the objectives of the European Research Area**
- align the mandate of the Helsinki Group with the **(post-)Lisbon 2010 European Strategy and the Ljubljana Process for the European Research Area**
- consider this Position Paper as the basis for the development of a **broad-based strategy document**, containing relevant actions, which could be adopted by the Commission and implemented by the Member States and Associated Countries
- **renew its commitment to mainstreaming gender in research**, both by ensuring the inclusion of the gender dimension in research priorities and funding programmes and by monitoring the participation of women in research funded by the Framework Programmes
- provide **support to coordinators for Gender Equality Actions in projects** co-funded by the Framework Programmes, and ensure that a gender perspective is properly included when negotiating projects to be financed (both gender-balanced participation and the contents of the projects themselves)
- cooperate with the **European Institute for Gender Equality** in order to develop a strategy for achieving the common goals. According to its mission statement, “the Gender Equality Institute will cooperate as closely as possible with all the Community programmes and agencies”
- fund a media campaign to raise awareness of the women in science issue in particular, and the need for gender equality in research in general.

The HG members commit to:

- create or revive **national Steering Committees** (as per HG mandate) on gender equality in science, and encourage greater activity in implementing actions to promote equality in science
- **bring this paper to the attention of Ministries** of Education, Research, Equal Opportunities, and any other relevant governmental body
- support the implementation and monitoring of the post-2010 Lisbon strategy in women in science and research
- open up a debate on gender equality in science by **mobilising at national level** the local stakeholders, science establishments and civil society organisations
- continue their contribution to the preparation of She Figures by supporting **progress in sex-disaggregated data collection** at the national level through influencing national statistical offices and cooperating with the sub-group of Statistical Correspondents.



2. Structural – and cultural – change is possible

Universities, and research institutions, need to be modernised in order to strengthen their research and innovation capacity (as confirmed by the Council Resolution on modernising universities²), and a key component of this modernisation process is improving the way the institutions are managed. The role of gender in human resource management (i.e. gender management) should be part of the modernisation process. The objective of such structural, and cultural, change is not just to ensure that women have equal opportunities but also to improve the effectiveness and impact of research.

The HG invites the European Commission to:

- ensure that the process for the **modernisation of universities**, and research institutions, includes the gender dimension
- continue efforts in shifting the focus of its gender and research actions from “fixing the (problems of) women” to “**fixing the administration**”³ (i.e. the way universities/research organisations are managed), and also to increase available funding
- ensure financial support for encouraging gender management in universities and research institutions.

The HG members commit to:

- identifying, at the national level, services involved with the development of the **National Action Plans** in the “European Partnership for Researchers for mobility and career development” – as well as the national representatives in the various bodies liaising with the Commission (e.g. CREST, Programme Committees) – in order to ensure that the issue of women in science is addressed
- **lobbying research decision-making bodies** in each country to raise awareness on promoting gender issues in research, and work towards achieving the 25% target for women in leading positions in the public sector⁴.

2. <http://register.consilium.europa.eu/pdf/en/07/st16/st16096-re01.en07.pdf>

3. Londa Schiebinger. Gender Issues in Research – Innovation through gender equality: Conference 18-19 April 2007, Berlin

4. Council Conclusions “Reinforcing human resources in science and technology in the ERA” – 18 April 2005

3. Women and men – and institutions – benefit from a balanced life

The personnel in universities and research organisations must be enabled to balance professional and private lives, and the specific contractual situations of researchers (project-based, short-term contracts, etc) should be taken into account, allowing flexible work organisation. The objective must be to attract and retain the best talent in research jobs and to increase the pool of European scientists.

The HG invites the European Commission to:

- ensure that the issue of gender in research is properly addressed in the implementation of the Commission's multi-annual **“Roadmap for equality between women and men”**⁵;
- ensure that European mobility schemes address properly the issue of pregnancy and parenthood in its implementation and financial rules.

The HG members commit to:

- **report on national or regional policy measures** and positive actions and exchange good practice.

4. School science education has an important role

Stereotypical images of science and researchers are formed very early in life, as are gender stereotypes. Efforts should not only go to raising the scientific literacy of the population in general, but also to attract higher numbers of students into scientific studies and careers. In this light, it is essential to address the interests of girls in particular, and to use gender-aware strategies involving all pupils, as well as teachers and parents.

The HG invites the European Commission to:

- continue its actions in the area of science education with the objective of attracting **higher numbers of young people to study scientific subjects** and undertake scientific careers

5. COM(2006) 92 final



- evaluate the interests of children, with a particular focus on girls, towards science, and identify the conditions in which this interest can best flourish to increase the number of women in science and technology
- Promote studies examining gender and science stereotypes that influence children's perception of science – particularly images of science and scientists in the media and school textbooks.

The HG members commit to:

- **renew their attention to the gender and science stereotypes** that influence children's perception of science, for example in school textbooks and the media
- **identify contact persons in Education ministries** and other relevant national or regional entities, particularly those responsible for school curricula and teacher training, and update them on gender policies.

Conclusions

With this position paper, the Helsinki Group wishes to reinforce its commitment to gender-aware research and to equal opportunities in scientific studies and careers. Gender equality benefits research since both women and men are then able to participate and contribute with their competence and experience.

The Helsinki Group also calls on the new European Commission to continue mobilising staff and resources in making the European RTD human resource framework an attractive and inclusive one.

The Helsinki Group invites the European Commission to consider the feasibility of a Communication on the topic of gender and research beyond 2009.

This Position Paper, "Gender and research beyond 2009", was adopted on 24 November 2009, at a meeting marking 10 years of activities of the Helsinki Group on Women in Science.

Chapter 3

Recruiting, promoting and retaining more women in science careers

Chapter 3 Recruiting, promoting and retaining more women in science careers

This chapter looks at the second group of policy objectives, which were identified in the analysis of the recommendations made to the European Commission from all the involved stakeholders over the last ten years. Once the situation of “Women in Science” in Europe was known (the first group of policy objectives) – a situation that can be described as: not enough women in science, especially at “recruiting, promoting and retaining more women in science and technology careers”. This chapter, therefore, will be looking at what has been done to improve the numbers and the role of women in science. The activities have been divided into three groups: 1) what the European Commission has done internally to improve the career prospects of women (particularly in research); 2) what the Member States have done to promote women’s careers in research; 3) how the European Commission has encouraged Member States to improve women’s career prospects in research by

funding pilot projects through the research Framework Programme.

3.1. What the European Commission has done internally to improve the career prospects of women (researchers)

The European Commission monitors gender balance in panels and groups relating to the functioning of the research Framework Programmes (FP), as well as the share of female and male researchers in FP co-funded projects. The staff of the European Commission is also regularly monitored in view of encouraging better gender balance at all seniority levels. The results are reflected respectively in the Gender Monitoring Studies (on the 6th Framework Programme – see Section 4.3 b) for details) and the Gender Equality Reports.

a) Improving the gender balance in research activities: the 40% target

Already in 1999, the European Commission set the minimum 40% target for members of each sex in all panels and groups that it convenes, and DG Research encouraged women researchers to register as experts in order to reach that target in evaluation panels, expert groups, conference speakers, etc. As a result, there has been an improvement in the gender balance in these groups, but this improvement has been modest.

The Commission also promotes and monitors gender balance in the share of female and male researchers in FP co(funded) projects.



DG Research's Gender Equality Report contains an analysis of gender balance in FP related research and administration, and shows patterns comparable to those seen in She Figures (see Section 2.1), in terms of access to research, scientific fields, and seniority of researchers.

In 1993 the European Commission's DG XII (Science, Research and Development), funded a study on the position of women in scientific research within the European Community, which focused on the barriers that women encounter in entering and advancing in this field. The Commission was asked to include qualified women in all European committees that set policy, and control funds, and to use future programmes, including the 4th Framework Programme, to promote equal opportunities for women in science and technology research.

It was Commissioner Edith Cresson – at the opening of the Commission-Parliament joint Conference “Women and Science⁹⁸” (April 1998) – who announced that in the 5th Framework Programme (FP5; 1999-2002) the Commission would promote specific activities to increase the participation of women in research. The Commission would ensure a more significant number in consultative and advisory bodies, and an internal monitoring of the results would be

carried out through a Gender Watch system.

The 1999 Communication “Women and Science – Mobilising women to enrich European Research”⁹⁹ – recognised the under-representation of women in science and the European Commission's wish to contribute to correcting the gender imbalance in scientific professions. The first objective was to develop a coherent approach towards promoting women in EU funded research, increasing their number among participants in FP5. The aim was to achieve 40% female participation in Marie Curie scholarships, advisory groups, and assessment/monitoring panels. This target was subsequently expanded to include all groups, panels, committees and projects involved in the Framework Programme.

In its resolution of May 1999¹⁰⁰, the Council confirmed the establishment of targets as a valid objective for the Commission, based

98 European Commission, “Women and science: Proceedings of the conference Brussels, April 28-29 1998” – 1999, Luxembourg: Office for Official Publications of the European Communities

99 COM (1999) 76 final – 17 February 1999

100 OJ C201/1 – 20 May 1999

on previously taken Recommendations and Decisions¹⁰¹.

At the end of the 1990s, hardly any statistics were available at the EU level on the number of women active within the scientific community. This had already been highlighted in conferences and reports in the course of the decade (e.g. 1993 International Workshop on Women in Science, Brussels; 1998 Women and Science conference, Brussels). In particular, in its report¹⁰², the European Technology Assessment Network (ETAN) working group on Women and Science proposed: to ensure gender balance in EU scientific decision-making (policy and grant-giving committees, expert and monitoring panels – minimum 30% of both sexes by 2002 and minimum 40% by 2005); to increase the number of women at grades A1-A3 in DG Research; to refuse to fund meetings that do not contain a sufficient number of women speakers (related to the proportion working in the field); to ensure adequate expertise on mainstreaming gender equality into Framework Programmes (equality training for European Commission

staff, expert and monitoring panel members); to collect sex disaggregated data.

In May 2001 the Commission reported¹⁰³ to the European Parliament and the Council on results achieved since the adoption of its 1999 Communication, as requested in the Council Resolution of May 1999. It defined the 40% target as “aiming high but sometimes falling short”. Although the 40% target for women had not been reached in 2001, the percentage of women’s participation was higher than at any stage during the 4th Framework Programme (FP4) (as far as data on FP4 were available). It was recognised that the actual setting of a target had an impact on increasing the number of women involved in the 5th Framework Programme.

The average participation of women in Advisory Groups for 1999 and 2000 was 29% and 27% respectively. Several programmes had been successful in achieving the 40% female target, although other programmes, such as Euratom, had few or no women in some groups. In comparison, women’s participation in the consultative bodies of FP4, such as the Industrial Research and Development Advisory Committee (IRDAC) or European Science and Technology Assembly (ESTA)

101 Recommendation of 2/12/96 on the balanced participation of women and men in decision-making process (OJ L 319/11 10/12/96); decision 182/1999/EC

102 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

103 Commission Staff Working Paper “Women and Science: the gender dimension as a leverage for reforming science” – SEC(2001) 771 – 15 May 2001



was respectively 0% and 8%. The situation was somewhat better in the Framework Programme Monitoring Panels. In 1999, 22% of the members of FP5 Monitoring Panels were women. This increased to 30% in 2000. Some programmes had over 50% women in their panels. During the whole period of FP4, women accounted for 6% of all monitoring panel members.

As far as the proposal evaluation panels were concerned, in 1999 the female share was 23%, and 22% in 2000. However, bearing in mind that women represented only 16% of the database from which evaluators could be extracted, these figures demonstrate the determination of the Commission to include women. Efforts were made to increase the number of women in the database but it is also recognised that changes might be called for in the organisation of evaluation sessions (e.g. remote evaluation, shortening on-site evaluation periods, childcare). As far as Programme Committees were concerned (nominations from Member States), women's participation was an average 21% in 1999 and 2000.

In the same document, the Commission defined as a future priority "an enriched Gender Watch System", as the "very heart of the mainstreaming approach". This system was to ensure that the gender dimension was taken into consideration throughout the whole Framework Programme; that the

target of 40% be maintained for women's participation in assemblies and panels; that the production of statistics on the participation of women in Framework Programme activities be improved; that the rules for participation ensure that the contractors contribute to the production of gender equality in science.

In June 2001¹⁰⁴ the European Council "urged the Commission to reach its target of a 40 % participation of women at all levels in implementing and managing research programmes, while continuing to bear in mind the need to ensure scientific and technological excellence".

The 40% target was confirmed in the launch of the 6th Framework Programme (2002-2006).

The Gender Impact Studies on the 5th Framework Programme (FP5)¹⁰⁵ were published in 2002. Their synthesis report presented the key findings and recommendations of seven studies carried out as part of the gender impact assessment exercise, launched by the European Commission in June 2000, to assess the

104 Council Resolution "Science and Society and Women and Science" – OJ 2001/C 199/01 – 26 June 2001

105 European Commission, "Gender in Research, Gender Impact Assessment of the specific programmes of the Fifth Framework Programme", European Commission – 2001 – Luxembourg: Office for Official Publications of the European Communities

way in which gender issues were being addressed in FP5. Each study focused on one specific programme or sub-programme of FP5, assessing whether and how gender issues had been taken into account and providing recommendations for a better integration of the gender dimension in the 6th Framework Programme (FP6, 2002-2006).

The staff working document published in 2005¹⁰⁶ referred to the Gender Impact Assessment Studies in updating the situation of female participation. As regards the 40% target for women's representation in committees, groups and panels, little progress had been made from FP5 to FP6¹⁰⁷ – Evaluation Panels: 22-27% (FP5) vs. 26% (FP6)¹⁰⁸; Advisory Groups: 28% (FP5) vs. 27% (FP6) with 4 programmes close to or above target; Expert database: 17% (FP5) vs. 24% (FP6); Programme Committees: 22% (FP5) vs. 26% (FP6); Project Coordinators: 16% (FP5)¹⁰⁹

vs. 14% (FP6)¹¹⁰; Marie Curie fellowships: ca 35% of the fellows in 2003 and 2004 were women¹¹¹.

The assessment of female participation in FP6 (women in advisory bodies, monitoring activities and evaluation panels; project coordinators) resulted in the Gender Equality Report for FP6, published in October 2008¹¹². The data in the report were collected partly through the IT applications used by the European Commission, and partly manually by the Unit "Scientific Culture and Gender issues" (the new name given in 2007 to the "Women and Science" unit) with the cooperation of the various Directorates of DG Research.

The Report concluded that setting the 40% target at the start of FP5 had a positive impact on the number of women involved in FP5, and in most cases an even more positive impact on FP6. The percentage of women has steadily increased since 1999.

The statistical booklet *She Figures 2006* provided a way to compare Framework

106 European Commission, "Women and Science – Excellence and Innovation – Gender Equality in Science" – SEC(2005)370

107 Statistics on the Framework Programmes – SEC(2005)370 annex 3

108 SEC (2005)370 annex 3.5: Only in the Science and Society programme was parity in the evaluation panels realised. The 40% objective was also reached in the Innovation programme (41%). In addition, Citizens and Governance with 39%, Food Quality and International Cooperation with 35% each have come close to the target. On the other hand, four programmes had women participation of less than 25%: EURATOM (6%), Aeronautics (14%), IST (18%) and Life Sciences (24%). For evaluators from EU-25 the percentage of women is 27% – see annex 3.4

109 Based on 13.954 FP 5 contracts of which for 7.864 the gender of the scientific coordinator could be identified

110 Based on 11.600 submitted proposals in 2003 – of 106.000 participants/coordinators 15.325 are women

111 For Host-driven actions (Research Training Networks, Host Fellowships for Early Stage Research Training and Transfer of Knowledge Host Fellowships selection of researchers is done by the selected host institutions) data is not available yet. Experience show that women's participation is higher in these early stage actions

112 European Commission, 2008. Available on website: <http://ec.europa.eu/research/science-society/>



Programme research with overall scientific research in Europe. Both the She Figures booklet and the Gender Equality Report showed a certain degree of horizontal (thematic) and vertical (hierarchical) segregation. The percentage of women in FP-related committees and panels (approximately 26% in 2006) was slightly lower than the overall percentage of women researchers recorded in Europe in 2003 (29%). It should also be noted that both the She Figures booklet and the Gender Equality Report suggested the existence of a “glass ceiling effect” for female researchers. She Figures 2006 shows that, in 2003, there were 59% female graduates but only 15% female professors. Likewise, taking the FP6 STREP (Specific Targeted Research) projects as an example, we can see that while there are nearly 50% female PhD students involved in STREP actions, while less than 20% of the scientists in charge were female. The data presented in this report indicated a similar success rate for female and male scientific coordinators. However, women were far more present as scientific coordinators of smaller FP6 funding instruments. The recommendations from the Report focus on the importance of reaching and possibly increasing the 40% target, together with the importance of ensuring systematic follow-up of data collection on women in Framework Programme research.

In May 2009 the Gender Monitoring Studies of FP6 were completed¹¹³. The exercise could be seen as a continuation of the Gender Impact Assessment Studies on FP5. Six gender monitoring studies were carried out between 2004 and 2007 to monitor progress towards gender equality and gender relevance awareness during FP6. Due to wide coverage of the studies, it was not possible for the Commission to oblige the contractors to use the same methodology, which meant that the results from the studies could not be easily compared. In addition, the studies encountered difficulties in collecting data from the Commission services, due in particular to the lack of timely and adequate information systems. Problems were also experienced due to structural reorganisations in the Commission, as well as personnel changes.

The studies found an overall improvement regarding participation rates, particularly in the groups, panels and committees associated with the Framework Programmes. There was a less significant improvement in proposals and projects. At the level of the FP as a whole, all the studies were in agreement that the collection of sex-disaggregated data should be more rigorously enforced,

113 European Commission, “Monitoring Progress towards Gender Equality in the Sixth Framework Programme – Synthesis Report” – 2009 – Luxembourg: Office for Official Publications of the European Communities

including information on the roles and seniority of women in projects.

The recommendations made by the Monitoring studies to the European Commission included: to continue its efforts in increasing the participation of women in Framework Programmes (ensuring that female participation is equal across different priorities and levels of seniority); collection of sex disaggregated data should be compulsory and more rigorously enforced

(including information on the types and seniority of women's roles in projects, monitoring the success rate of female project scientific coordinators, encoding the sex of participants); to counter preconceptions concerning the lack of availability of female scientists (the studies found that this was not always the case); although the 40% target is well known and established, the Commission should consider refining the targets to suit the research area.

b) Improving the gender balance in the European Commission itself

The staff of the European Commission is also regularly monitored in view of encouraging better gender balance at all seniority levels. Targets on this were first approved in 1995. Although a clear progress towards better equality can be observed over time, considerable efforts still need to be made to improve gender equality in middle and senior management positions.

The European Commission's staff is monitored according to gender and a number of other variables (age, nationality, etc.). The equal opportunities policy for female and male members of the personnel of the European Commission has been in place since 1988. Since 1997, the action programmes on equal opportunities for women and men contain measures to promote the under-represented sex at all levels of EU administration.

Targets on women in administrator positions (AD category) were adopted in 1995, within the framework of the Third Action Programme for equal opportunities between women and men (1997-2000). In the years 1999-2000, targets were also set for women at the middle and senior management levels. The "Fourth action programme for equal opportunities for women and men at the



European Commission (2004–08)¹¹⁴, mainly aimed at improving the gender balance in the Commission, removing barriers to the career development of women and reconciling personal and working life. It also placed emphasis on quantifiable measures that can be compared across departments and monitored on an annual basis.

To face the fact that targets could not always be met, binding measures were adopted in September 2006 for appointments to middle management posts. Examples of such measures are written justification by Directorates-General (DGs) for the absence of women on a shortlist when there are female candidates for the post; compulsory representation of both sexes and designation of a special rapporteur for equal opportunities on all selection panels; organisation of courses on equal opportunities that are compulsory for all Commission managers.

The 2007 targets were set at: 25% of first appointments to senior management posts, 30% to middle management posts and 50% to non-management AD posts. This was the first year that all targets were met (35% at senior management level, 31% at middle management level and 54% at AD level) In 2008, from a total of 24,607 (officials and temporary agents), a little over than 50% was

women. The visualisation of the percentage of women at all seniority levels requires a more detailed analysis of the data presented on the European Commission Civil Service website. There are a total of 12,113 (Assistants) staff members in the European Commission, and a total of 12,494 AD (Administrators) staff members. In terms of Assistants, women number 7846, representing over 64% of the Assistant labour force. Women in AD positions number 4675, i.e. about 37%. AD grades are divided by seniority on a scale from AD5 to AD16. Within the group AD5-7, there are about 52% women. Within the group AD8-13, there are about 35% women. Within the group AD14-16, there are about 16% women. Therefore it can be said that the female share of Commission staff members varies considerably according to the seniority level.¹¹⁵

The Commission adopted Communication SEC(2009) 694/4 of 10 June 2009, concerning the targets for the recruitment and appointment of women to management and other AD level posts in the Commission in 2009. It analyses the situation of 2008, when all the targets were not met: the target set for senior management was not reached (19%); the target set for middle management was not reached (28%); the target set for AD

114 European Commission, 2004. Available on: http://ec.europa.eu/civil_service/docs/4th_action_programme_en.pdf

115 European Commission, DG ADM, MEMO/08/727
Date: 20/11/2008

non-management posts was exceeded (55%), the best rate since 2004.

recruited to AD non-management posts must be women for the Commission as a whole.

The situation as regards the representation of women as of 31 December 2008 is:

- 20% in senior management
- 21% in middle management
- 40% in AD non-management posts.

This indicates that further progress is needed, particularly as regards management posts, since, despite a slight increase over 2007, these figures show that representation rates are rising too slowly for parity to be reached at management level within a reasonable period of time.

Targets were proposed for 2009: women must account for at least 25% of recruitments and appointments to senior management posts; women must account for at least 30% of recruitments and appointments to middle management posts at both AD 9/12 and AD 13/14, with special attention to be paid to appointments to grades AD 13/14; a total of 50% of officials and 50% of temporary staff

3.2 Activities by Member States to improve career prospects for women researchers

Although the European Commission can encourage change in Member States, and can set an example through its own actions, it is the Member States themselves who must take any steps that could improve the career situation for women researchers. The 40% target (see Section 3.1) was initially set as an internal target for the Commission, but this has also been adopted by many Member States as a measure of gender equality. The Commission proposed a 25% target for women on the decision-making level in public research, which was adopted by the Council in 2005. As regards the gender pay gap, the Commission can only provide information and monitor progress (although EU legislation does foresee equal pay for equal work).

a) Targets and quotas

The issue of quotas and targets, as a way of addressing the under-representation of women in scientific careers, especially in top-level positions, has been a topic of heated debate for decades. The use of quotas involves preferring women to men in appointments (where equally suitable candidates exist) in order to achieve a better gender balance, whereas target setting tends to be time-limited and is often seen as a more palatable



form of positive action. It suggests a more voluntary approach, and is therefore generally more acceptable to the scientific community, including the women. Both targets (and quotas) serve to remind people of the need for gender balance.

Although the European Commission may encourage target-setting, it is up to the Member States to implement any such suggested targets (or quotas). For example, although a 25% target for women in top-level research positions in the public sector was agreed by the EU, no deadline was set, resulting in very little action by the Member States.

In addition to encouraging the Member States to set targets, the European Commission has set itself a 40% target (for the underrepresented sex) to improve gender balance in Framework Programme panels, etc (see Section 3.1). Setting such a target, even in those fields of science with a traditionally low proportion of female scientists, is generally seen as valuable, not least because it continues to draw attention to the issue of the low proportion of women in science.

The issue of quotas, targets, positive action, etc, as a way of addressing gender imbalance, is a controversial topic – despite the fact that positive actions are openly mentioned in Article 157 of the Treaty of the European Union (previously Art. 141 of the Rome Treaty) which says (Par 3.) “The European Parliament and the Council ... shall adopt measures to ensure the application of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation, including the principle of equal pay for equal work or work of equal value.” and (Par. 4.) “With a view to ensuring full equality in practice between men and women in working life, the principle of equal treatment shall not prevent any Member State from maintaining or adopting measures providing for specific advantages in order to

make it easier for the underrepresented sex to pursue a vocational activity or to prevent or compensate for disadvantages in professional careers.”

During the 1993 “women in science” workshop¹¹⁶, concern was expressed over the use of the term “positive action”: “Behind the word “positive” lays the fear of the mass of employers that what one is looking is for is legislative obligation coming through governmental, public intervention or – worse still – from the European Community”. At the 1998 conference “Women and Science”, reference was made to the UN Commission

116 European Commission, “Women in Science – International Workshop – 15-16 February 1993, Brussels – Proceedings”, edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

on the Status of Women stating in 1990 that “a critical thirty per cent threshold should be regarded a minimum share of decision making positions held by women at national level”. In 1998 the British governmental report “Rising Tide” recommended a “25% per cent representation of women for all public appointments and senior positions in science, engineering and technology, including chairmanships” by the year 2000.

Nevertheless, quotas are also seen as solely an instrument to speed up change. The ETAN report “Promoting excellence through mainstreaming gender equality”¹¹⁷ proposed that “all funding bodies have at least 30% members of men and women by 2002, and 40% by 2005”. The Helsinki Group’s Report on “National policies on Women and Science” (2002) recognises that setting quotas as a means of combating gender segregation and delivering equality can be effective, but that it tends to be contentious. Such use of quotas involves preferring women to men in appointments (where equally suitable candidates exist) in order to achieve a better gender balance and address historical group disadvantage or discrimination. Quotas, however, can provoke backlash and accusations of “tokenism”. But quotas can encourage

applications from good women candidates who might not otherwise have felt it worth applying. Some quotas foster applications from women by focusing on providing resources in scientific fields in which women tend to specialise. This, arguably, provides a balance to the historic provision of resources to predominantly male areas of expertise. Also, where it has proved to be very difficult to shift entrenched patterns of gender segregation, whether horizontal or vertical, sometimes the use of quotas can be a helpful device to kick-start change. As opposed to quotas, target setting implies taking active steps to encourage more applications from women. Target setting tends to be time-limited and is often seen as a more palatable form of positive action since it suggests a more voluntary approach. The Report showed that 7 Member States (MS) and two associated countries had gender balance targets on university and research institute committees, while 3 MS and one associated (Nordic) country had gender balance quotas on university and research institute committees.

In 2005, the Commission replied to the Council request to be updated on women and science policies (Resolution, 2001), and on the Women in industrial research initiative (Resolution, 2003), by publishing a working document (Commission staff working paper “Excellence and Innovation – Gender

117 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities (page 45)



Equality in Science”¹¹⁸) which recognised that – despite some progress – much remained to be done, and proposed further steps to be taken. The document summarised progress made at national level, recognizing that gender equality policies – but not necessarily in research – had become an important issue in all EU Member States. Its proposals were: to set a target to increase the number of women in research leading positions to 25% by 2010 (and a target for the proportion of women in new recruitments of at least 33%), to avoid gender bias in selection procedures, and for Member States to develop annual statistics on recruitment.

In April 2005, the Competitiveness Council¹¹⁹ emphasised the need to continue promoting gender equality in science through national and European programmes and increasing the participation of women in science and in industrial research in Member States; and invited them to “formulate ambitious targets for the participation of women focusing on areas where women are seriously under-represented, and in particular increase significantly the number of women in leading positions, with the aim of reaching, as a first step, the goal of 25% in the public sector as an average in the EU, as well as boost their

participation in industrial research and technology”. It should be noted that, although the Council adopted the 25% target, no deadline was set, leaving it up to the Member States to decide the pace of any progress.

In order to analyse the existing situation of women in top research positions, the Commission established an expert group on “Women in Research Decision Making” (WIRDEM). The objective was to identify which measures have proven successful/unsuccessful in the promotion of women to top level positions (good practice examples). The 2008 WIRDEM report “Mapping the Maze: Getting more women to the top in research”¹²⁰ concluded that, although there were numerous examples of good practice in Member States, it was difficult to draw conclusions about the results. The recommendations called for a stronger commitment from the EU and Member States (including monitoring action plans to advance gender equality in research institutions, training committee or board members on the gender aspects of their work, enhancing the visibility of women in science); a reasonable gender balance in especially high-profile bodies; improved transparency of funding, promotion and nomination procedures; measures to systematically introduce the gender

118 European Commission, “Women and Science – Excellence and Innovation – Gender Equality in Science” – SEC(2005)370 – 2005

119 Council conclusions “Reinforcing human resources in science and technology in the ERA” – 18 April 2005

120 European Commission, “Mapping the Maze: Getting more women to the top in research” – 2008, Luxembourg: Office for Official Publications of the European Commission

perspective in human resource development and in future research.

In April 2008, the European Council stressed the need for an empowerment of the role of women by encouraging their equitable representation in decision-making bodies and in high-level appointments. Reference was made to the process described in “Family friendly scientific careers – towards an integrated model”, which began with the Slovenian Presidency of the European Union (the so-called Ljubljana Process, about the fifth freedom of the EU’s internal market: freedom of mobility for researchers, which includes the creation of better working conditions, work life balance, and training for young researchers).

At the same time, Commissioner Potočnik sent a letter to all Member State (MS) ministers responsible for research asking to be updated on progress made towards the 25% target (for women in leading research positions in the public sector) that had been set by the Council in 2005. Replies were received from only a minority of MS, who nevertheless generally agreed that the underrepresentation of women in research, particularly at the top level, is a problem that needs to be addressed, and they therefore support the Commission in its activities. The responses confirmed that although only few of the MS have come close to the 25% target, all have demonstrated some statistical improvement over the years. A number of MS have a practical commitment

to gender mainstreaming in research, and many are taking specific measures to promote the role of women. In fact, She Figures 2009 – containing 2006-2007 data – indicates an increase from 16% to 19% for the share of women amongst full professors in Europe. Some progress has indeed been made, but this cannot be called significant.

In April 2008, the European Parliament’s Committee on Women’s Rights and Gender Equality produced a report (presented by MEP Britta Thomsen) on “Women and Science”¹²¹, where measures such as “obligatory targets for female researchers and professors” were identified as essential instruments for achieving gender balance in research. The European Parliament called on the Commission to provide targeted gender-awareness training for those in decision-making positions, on advisory boards and evaluation panels, who draft invitations to tender, as well as those in tender and major contract negotiations. In partial reply to this request, DG Research commissioned the development of a “gender toolkit and training” package, which is already being used (see Footnote 68).

The European Commission itself adopted a target for women in science in its first Communication on the topic¹²²: a minimum

121 EP 2007/2206(INI)

122 Communication “Women in science: Mobilising women to enrich European research” – COM99/76 – February 1999



40% representation, on average, throughout the 5th Framework Programme, in Marie Curie scholarships, advisory groups and assessment panels. In reaction to this Communication, the Council welcomed¹²³ the target, as did the European Parliament¹²⁴, which also called on Member States to cooperate with the Commission in “pursuing the gender balance in scientific research at national level”. Since then, the 40% target has been monitored by the European Commission through all its research Framework Programmes. Results from the 6th Framework Programme (FP6) show that the target is far from being reached (for more detail, see Section 3.1).

The value of setting participation targets, however, became an issue during FP6 due to concerns that pursuing targets could harm scientific excellence through the selection of scientists based on their sex rather than their expertise. Such concerns were reflected in a study carried out on the gender perspective of FP6, but the subsequent report¹²⁵ made further recommendations for improving gender balance, such as targets for involving women in senior research positions in Framework Programme projects and targets for increasing the visibility of female researchers (international conferences and seminars).

123 Council Resolution 8565/99 – June 1999
124 Report A5-0082/1999 – PE231.841/99

125 European Commission, “Monitoring Progress towards Gender Equality in the Sixth Framework Programme – Synthesis Report” – 2009, Luxembourg: Office for Official Publications of the European Commission

b) Gender Pay Gap: women researchers are paid less

The gender pay gap is the average difference between men’s and women’s hourly earnings within the economy as a whole. Although the principle of «equal pay for equal work» is enshrined in EU and Member State legislation, women across Europe earn an average of 17% less than men and this gap is not narrowing.

The initiatives that can be taken by the European Commission to change the situation, however, are limited to data collection and awareness-raising, such as the information campaign launched by DG Employment in March 2009. The gender pay gap issue in research is sufficiently important to be included in the priority actions to be tackled by the Member States, in partnership with the Commission, through the various National Action Plans for the development of researcher careers.

Equal pay for equal work is a fundamental principle of Community law, which was established in the Treaty of Rome, in 1957 (see Section 3.2 a), reinforced by the 1976 Community Directive, as amended in 2002¹²⁶. The various Directives concerning equal treatment between women and men were incorporated into a single Directive adopted in 2006, enshrining in law the principle that it is illegal to discriminate against women in the labour market by paying women lower wages for doing the same work, or work of equal value, as men.

Despite this, there is still a 17% pay gap¹²⁷. It should be noted, however, that the pay gap is not an indicator of the overall equality between women and men. In most of the countries in which the female employment rate is low (e.g. Malta, Italy, Greece, Poland), the pay gap is lower than average, which may reflect the small proportion of low-skilled or unskilled women in the workforce. A high pay gap is usually characteristic of a labour market which is highly segregated (e.g. Cyprus, Estonia, Slovakia, Finland) or in which a significant proportion of women work part-time (e.g. Germany, United

Kingdom, the Netherlands, Austria, Sweden).

In the research sector, there is very little specific data available on the gender pay-gap, but existing information does illustrate that women in research are paid less than men, and that the gender pay gap in research could be greater than the general pay gap. For example, according to She Figures 2009¹²⁸, the gender pay gap for physical, mathematical and engineering science professionals (EU-27) was 29% in 2006.

In the UK, the 1999 Bett review of academic salaries revealed that women received less pay than men at every single grade throughout the university hierarchy. The report identified the gender pay gap as a serious issue and recommended that it be addressed at the soonest¹²⁹. More recently, and specifically for the scientific community, a UK study analysed the results of a survey of over 7000 scientists that showed a considerable pay gap between male and female academics working in science, engineering and technology. Explicable differences (seniority, experience, age) amounted to 77% of the overall pay gap so the study concluded that the substantial

126 Directive of the European Parliament and of the Council of 23/9/2002 amending Council Directive 76/207/EEC on the implementation of the principle of equal treatment for men and women as regards access to employment, vocational training and promotion, and working conditions – OJ C240, 5 October 2002

127 Tackling the pay gap between women and men – COM(2007)424 – 18 July 2007.

128 http://ec.europa.eu/research/science-society/document_library/pdf_06/she_figures_2009_en.pdf

129 Independent Review Committee on Higher Education Pay and Conditions, 1999



23% pay gap could be attributed to discrimination¹³⁰.

A study published in 2007 by the European Commission¹³¹ on the remuneration of researchers in public and private commercial sectors in the EU-25 and associated countries also included information on male-female differences in researcher pay. The results show that in most of the analysed countries, the remuneration of male researchers is higher than for women, and that the difference is significant, ranging from 15% to even 40% in some countries.

In April 2008 the European Parliament's (EP) Committee on Women's Rights and Gender Equality produced a report on Women in Science¹³² (presented by MEP Britta Thomsen), where the EP calls on the Commission to introduce effective policies to eliminate the gender pay gap. It noted that in the field of science the principle of equal pay should also apply to scholarships and stipends.

Pay gap is also mentioned among the main factors inhibiting mobility and career

development of researchers in the study¹³³ funded in 2005 by DG Research. It is also mentioned in the Commission Communication "Better careers and more mobility: a European partnership for Researchers"¹³⁴ as one of the problems to be solved in partnership with Member States, but the pay gap is unfortunately not among the priority actions to be tackled by Member States through the National Action Plans that they are preparing. The priority actions include: improving career development opportunities for early-stage researchers (introducing "flexicurity" principles), introducing more flexibility for senior researchers (rewarding good performance and allowing non-standard career paths), ensuring adequate social security coverage for stipend and fellowship-holders, achieving adequate gender representation in selection and funding bodies at research institutions (systematically adopting policies that enable both men and women to pursue a scientific career with an adequate work-life balance, such as dual career policies).

130 University of East Anglia – Based on report "Equal Measures: Investigating University Science Pay and Opportunities for Success" by Jan Anderson and Sara Connolly

131 "Study on the remuneration of researchers in the public and private commercial sector" Service Contract REM 01, March 2007

132 2007/2206(INJ)

133 IDEA Consult et al., "Evidence on the main factors inhibiting mobility and career development of researchers", European Commission, 2008, Luxembourg: Office for Official Publications of the European Communities

134 COM(2008)317 final – May 2008

c) Awards and special funding

Providing awards and special funding for women scientists is a measure that has often been recommended but taken up by only some Member States. Special awards or prizes are also considered to be good for visibility – benefiting both the career prospects of the women receiving them as well as increasing public awareness about women in science.

Nevertheless, the European Commission has not favoured such an approach and has preferred to encourage gender balance in all allocated awards.

Amongst the activities to support women in science that were recommended by the ETAN report¹³⁵ in 2000, was the setting up of a “one time grant” scheme to address one of the specific barriers facing women. Such a scheme would provide funding for those who needed small amounts of money to establish international contacts or who needed to kick-start their careers.

The Helsinki Group’s Report in 2002 also called for “Earmarked chairs, research funds and prizes” for women scientists. It concluded that “such earmarking is also highly contentious and sometimes attracts criticism that it is demeaning or patronising for women. Sometimes women are simply targeted; guidelines carry the message that applications from women are especially

welcomed (even though men may apply as well). This seems to have the effect of generating more applications from women. Indeed, several countries report that such earmarking or flagging up a welcome to women applicants can be very effective in encouraging women to make applications that they might not otherwise have made. It is as if the women concerned have greater faith that they stand a chance of success in such competitions. In this, they are useful devices for boosting women’s confidence and helping them to gain experience in making applications. It should be noted however, that women might also benefit from new measures that are not particularly designed to address their specific needs but seek to offer genuinely gender-neutral opportunities. Graduate schools have been described as one such example. Indeed, women may benefit more from well-designed measures that seek to accommodate women and men, in all their diversity, than from those aimed only at women.”

¹³⁵ European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities



In 2005, the “Gender and Excellence” Commission staff working document¹³⁶ recommended that a European award on excellence in gender research be launched; while the 2008 report “Mapping the Maze: Getting more women to the top in research”¹³⁷ gave examples of special funding for women in a number of Member States, but conceded that this was not a common practice. The report saw benefit, however, in the creation of high-profile prizes for women in order to enhance the visibility of women in science – which would contribute to general awareness-raising as well increasing the chance for the women of being regarded as candidates for top positions.

The 2008 National Policies benchmarking report¹³⁸ described cases of scholarships targeting female students, and fellowships or chairs reserved for women, as well as a range of other kinds of financial incentives directed at women in science. The regression analyses showed that the presence of special funding for women in science is positively correlated with the proportion of women in grade A academic positions, but

negatively correlated with the proportion of women researchers. As with the other measures, the negative correlation with the proportion of women researchers suggested that special funding initiatives were a reaction to the under-representation of women in science, and illustrated that the countries with higher proportions of women researchers are also the countries with less developed national systems of innovation, and therefore policies.

The positive correlation between special funding measures and the proportion of women grade-A professors reflects the fact that special funding measures are likely to be introduced in countries actively seeking to address gender imbalance in science, where there is already a raised level of awareness about the issues involved. Therefore, such measures tend to be introduced in countries where there is a groundswell of opinion on the issue, as well as significant levels of women in lower grade positions. The introduction of funding or other special measures therefore has only limited impact on lower level posts but has more impact in terms of encouraging the movement of women upwards through the occupational hierarchy.

Special schemes have been implemented in some countries for women scientists returning to their scientific careers after a break. However, the statistical analysis in the Report does not show any correlation

136 European Commission, “Women and Science – Excellence and Innovation – Gender Equality in Science” – SEC(2005)370 –2005

137 European Commission, “Mapping the Maze: Getting more women to the top in research” – 2008, Luxembourg: Office for Official Publications of the European Commission

138 European Commission, “Benchmarking policy measures for gender equality in science” – 2008, Luxembourg: Office for Official Publications of the European Commission

between the presence of measures for returnees and the proportion of women in science. This suggests either that, at present, these measures are insufficient to bring about real change in enabling women to participate within the science workforce; or that, even with these measures in place, the science setting is insufficiently attractive to women to render them willing to return, even once this has been made more feasible.

3.3. How the European Commission has encouraged Member States to improve women's career prospects in research by using Framework Programme funding

The European Commission supports change in the Member States by funding specific projects as pilot phases of major initiatives that could be taken at national level. These pilot projects have been aimed at encouraging women to select science and technology careers, keeping them in these careers, and getting them into the top jobs.

These were activities to “fix the women”¹³⁹ so they would not feel alone in the scientific community, but also to “fix the administrations” so that they would fit in better with the existing working environment and culture.

A number of projects were funded (see Annex V), responding to specific requests published regularly by the European Commission in calls for proposals (see Annex IV). The content of these calls for proposals was determined by the need for more information on certain topics raised by the research policy community, or by recommendations made in reports, or by new issues opened up by previous researches.

This chapter examines these projects that have been grouped according to the major recommendations presented to the Commission by the various stakeholders (see Table in Annex I).

¹³⁹ Londa Schiebinger at the conference “Gender issues in research – Innovation through equality of opportunity”, Berlin, April 18/19, 2007

a) Networking: to empower women scientists

Networking has been one of the more frequently mentioned recommendations over the years. It is generally considered a priority tool for empowering women in science, as a response to the «old boys' network», which is seen as playing a major role in recruitment and nomination procedures in research. (*An “old boys' network” is defined as an informal,*



exclusive system of mutual assistance and friendship through which men belonging to a particular group, such as the alumni of a school, where they exchange favours and connections in politics, business, etc). The European Commission (EC) has supported projects aimed at consolidating existing women's networks, culminating with funding the creation of the European Platform of Women Scientists (EPWS) in 2005. Due to the nature of project funding, EC support could not continue indefinitely, and since the Platform was unable to secure coverage for its running costs, the EC contract for funding activities had to be interrupted in 2009. Discussions on possibilities for continuing the work of the Platform in another format – e.g. through member organisations and/or the EC – are ongoing.

The European Commission acknowledged for the first time the importance of promoting networking of female researchers during its 1993 conference on “Women in Science”¹⁴⁰. Two networks were presented: WITEC (Women in Technology in the European Community), aiming at increasing the number of girls and women in science and technology (S/T) studies and careers and supporting their career progression, and GASAT (Gender and Science and Technology Association), an international network of researchers focused on research on the position of women in S/T, from school to university level and in the workplace. The conference concluded with a recommendation to the Task Force Human Resources and DG XII (later DG RTD) to

strengthen their commitment to improving the situation of women in S/T by, among other actions, “funding networks specifically for women in Science and Technology both in the European Commission as well as in individual Member States”. The role of these networks was identified to be in mentoring, job finding, providing contacts, exchanging information, and persuading more women to enter the fields of S/T. Also, that networks should be used to ensure that women are adequately informed about the 4th Framework Programme (FP4).

In 1999, the Commission convened the first meeting of representatives of networks of women scientists in Europe (69 networks had been identified at that stage). About 150 representatives of networks, publications and websites on women scientists attended the event. The aim of the conference was two-fold. It sought to mobilise existing networks with a view to increasing the

140 European Commission, “Women in Science – International Workshop – 15th to 16th February 1993, Brussels – Proceedings”, edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

participation of women scientists in the 5th Framework Programme (FP5), while also examining the extent to which the creation of a European-level network of networks could bring added value, and if so, what form such a structure could take. A final declaration was adopted at the end of the meeting, where representatives called for a network of networks of women scientists in Europe (15 Member States and the Central and Eastern European countries), as well as for better tools for the networks (awareness and educational tools, tools for communication, lobbying and advocacy, measurement, networking). EU intervention and funding was also called for.

Another outcome of the 1999 conference was a network guide. This was published in 2000 and it included the profiles and contact addresses of the 69 existing networks. The document was produced by the Women and Science Sector of DG RTD. After 2000, the guide was updated regularly. For example, the Directory of Networks of Women Scientists¹⁴¹ was produced by an external contractor for DG Research, and published in 2003. The rationale for the guide was that networking could contribute in a very practical way to redressing the gender balance in research, supporting and empowering women scientists in their

careers. The guide provided profiles and contact details of over 80 networks of women scientists active in the EU Member States and the countries associated to the 6th Framework Programme in 2003. Networks were listed in terms of their geographical coverage (national, European, or regional), with the practical aim of facilitating contacts between women scientists at national and transnational levels. In this sense, the Guide served as a feasibility study for the later launch of a call for proposals for a platform of women scientists. Before that, however, other policy documents came to agree on the need for such an action.

The 1999 Commission Communication "Women and Science"¹⁴² in fact had insisted on such action. The document stated the intention of the European Commission to establish links with existing networks of women scientists, such as WITEC (Women in Technology), WISE (Women's International Studies Europe), AWISE (Association for Women in Science and Engineering), WITS (Women in Technology and Science), AOIFE (Association of Institutions of Feminist Education and Research in Europe) and the European Women's Lobby. A meeting to examine the current situation and plan future actions was set for the first half of 1999 (the 5th Framework Programme was seen as being supportive to a Europe-wide

¹⁴¹ European Commission, "Directory of Networks of Women Scientists" – 2003. Contractor Bradley Dunbar Associates Ltd

¹⁴² COM(1999) 76 final – 17 February 1999



networking structure). There was also a recommendation to invite existing networks to actively participate in various conferences/events. The 1999 Communication acknowledged the role that networks could play in ensuring a better integration of the gender dimension in research policy.

The European Parliament also took up the call for networking in its Resolution of 3 February 2000¹⁴³ saying that the Parliament supported the idea of mobilising the numerous existing networks of women scientists, and obtaining their help in the formulation of European Union research policy. The Parliament directly addressed the networks of women scientists by calling on them to mobilise and become better involved in the decision-making and policy-making process, both at EU and Member State level.

Acceptance of the importance of a European network of female researchers' organisations was finally reflected in the Science and Society Action Plan, issued by the European Commission in 2002¹⁴⁴. In particular, Action No 24 has first mention of the "European Platform of Women Scientists". The platform, to be supported under the 5th Framework Programme, was to facilitate the exchange

of experience and good practice, and cooperation and consultation across different fields of science. The ultimate goal was to involve a higher number of women scientists in the European policy-making process, with the main tools being awareness raising and communication campaigns, in addition to lobbying and advocacy work. Other activities were to include training, and the compilation of a database of role models and mentors. The same aim was restated in the European Commission Staff Working Paper "Women and Science: the gender dimension as leverage for reforming science"¹⁴⁵.

Later that year, the Women and Science Unit of DG Research organised a "Gender and Research" conference (8-9 November 2001)¹⁴⁶. In his introduction to the conference, Achilleas Mitsos, Director-General of DG RTD, noted that the Commission intended to bring together networks at European level with the creation of a European Platform of Women Scientists. Such a structure was meant to support and empower female scientists in their careers, promoting their participation in European research and enabling them to push for policy change in research policy: the aim was to create networks of "nice ladies", to provide a

143 PE284-656 – A5-0082/1999 – OJ C 309, 27 October 2000, p. 57

144 European Commission, "Science and Society Action Plan" – 2002, Luxembourg: Office for Official Publications of the European Communities

145 SEC(2001)771, 15 May 2001

146 European Commission, "Gender & Research – 8/9 November 2001 Conference Proceedings" – 2001, Luxembourg: Office for Official Publications of the European Communities

counterweight to the “old boys’ networks” in mentoring young researchers.

In 2002 the European Commission published a report “National Policies on Women in Science in Europe”¹⁴⁷, written by Teresa Rees, with the contribution of the Helsinki Group (see Section 2.3) and DG Research. The report includes a session on policy measures, which in turn has a dedicated chapter on networks. The report starts from the assumption that membership in or exclusion from scientific community networks can have a considerable impact on the career of researchers, and then reviews the existing types of women’s networks across Europe. While several countries appear to have structures such as task forces or inter-ministerial committees on equal opportunities, activism in women in science, however, is relatively weak. This is even more the case for female researchers in the private sector. A key issue for the establishment and sustainability of networks of women scientists is identified as the existence or lack of policy and financial support by governmental institutions.

Regarding existing networks in the scientific community, a workshop on “Minimising Gender Bias in the Definition and

Measurement of Scientific Excellence” was held in October 2003 in Florence¹⁴⁸. The recommendations from the workshop were structured along five axes: Evidence, Awareness, Field Boundaries, Networks and Procedures. Under Networks, the report established a direct link between awareness and power. There was a recommendation to establish quotas or targets for the presence of researchers of both sexes into existing scientific networks.

An additional confirmation of the importance of female networks for promoting the careers of women in science came in 2003 with the “Women in Industrial Research”¹⁴⁹ report. The report was published by the European Commission following a study undertaken by the Research Centre Dulbea (ULB, Belgium) and CIREM (Foundation Centre for European Initiatives and Research in the Mediterranean, Spain). As the title says, the report was concerned with the particular situation of female researchers in the private sector. The chapter on “Network Building” looked at informal networks in particular where important managerial decisions are taken, and from which women are very often excluded. A graphical example would be the

147 European Commission” The Helsinki Group on Women and Science – National Policies on Women in Science in Europe” – 2002, Luxembourg: Office for Official Publications of the European Communities

148 The proceedings of the workshop were published as “Gender and Excellence in the Making” – 2004, European Commission, Luxembourg: Office for Official Publications of the European Communities

149 European Commission, “Women in Industrial Research – A wake-up call for European industry” – 2003, Luxembourg: Office for Official Publications of the European Communities



sauna-evenings for employees and managers of Finnish companies. However, some examples of women's organisations are described in the report in terms of good practice, such as the NICE group of women engineers based at the Finnish company Outokumpu Research OY. The main value of the networks is the taking part in informal work discussions, and having as role models senior network members who might share both their positive and negative experiences in career advancement. The main limitation for network participation, however, seems to be time investment since women already have to manage, in addition to work, considerable care tasks within the family. Another critical factor for networks of women in industrial research is the presence, or lack, of support for the initiative displayed by company managements.

Also in 2003, the European Commission published "Waste of talents: turning private struggles into a public issue – Women and Science in the Enwise countries"¹⁵⁰. The report was written by the Enwise Expert Group on women scientists in the Central and Eastern European countries and the Baltic States, providing an insight into the situation from a historical, as well as a contemporary perspective. Among the

recommendations to the European Commission, which were divided under four headings (Data collection, Information, Special actions to encourage women's participation in the FP, and Continued support to women and science at EU level), the report called for "facilitating connections between national women and science-related networks of the Enwise countries and other European networks, in particular the planned European Platform of Women Scientists".

Returning to the issue of financial support to women scientists' networks, and more particularly to a network of networks, the inclusion of the topic in EU policy documents led to the publishing in 2003 of a 6th Framework Programme call for proposals on networks. A project called DATAWOMSCI was funded in 2004, to analyse the status quo of databases on women scientists and their future perspective in Europe. Its report, "Database of Women Scientists – Overview, best practice guidelines, and future perspectives"¹⁵¹ provided a useful basis for progressing in the creation of a European network for women in science.

On the basis of the Science and Society Action plan request, the PLATWOMSCI project was selected for funding (€ 1.98 Mio)

150 European Commission, "Waste of talents: turning private struggles into a public issue – Women and Science in the Enwise countries" – 2003, Luxembourg: Office for Official Publications of the European Communities

151 CEWS "Databases of Women Scientists", 2005, Bonn: Walrich Druck Ahrweiler GMBH, Bad Neuenahr- Ahrweiler

in 2004, in order to study the feasibility of a European platform of women scientists and to coordinate its creation. The project also created a Founding Board with high-level women scientists to oversee the operation and provide guidance.

Following on from the original PLATWOMSCI project, the “European Platform of Women in Science” was established as a Belgian company in November 2005. The network’s secretariat was located in Brussels, and received a “grant to named recipient” from the Framework Programme for € 600,000 to support its networking activities between 01/11/2008 and 30/04/2010. The objectives of the EPWS included: being the voice of women scientists at a European and international level (around 11,000 represented through the various member associations); creating a European network of national/regional networks; creating links between women scientists and European policy making; creating a European added-value to the member associations; following European policy debate in research; enhancing visibility of female scientists at EU level; contacts with EU institutions (European Parliament, the Commission’s DGs for Research, and Employment). Due to the nature of project funding, EC support could not continue indefinitely, and since the Platform was unable to secure alternative funding, the EPWS Secretariat ceased its operations in 2009. Discussions on possibilities for continuing the work of the

Platform in another format – e.g. through member organisations and/or the EC – are ongoing.

In 2006 another regional network was created, called BASNET – the Baltic States Network of Women in Science – which was one of the outcomes of a 6th Framework Programme project. This network seeks to address the low number of existing networks of women in science in the participating countries.

Other, more recent calls for networking are found in the expert report “Mapping the Maze: Getting more women to the top in research”¹⁵², published in 2008, where one of the recommendations is that both the EU and national governments should fund awareness raising networks to produce advertising campaigns, press kits, and training on gender in research. Also, in its report on Women in Science¹⁵³ in 2008, the European Parliament’s Committee on Women’s Rights and Gender Equality states that networks of women scientists are an essential instrument for attracting more women to scientific and technological fields and promoting them to posts of responsibility, to encourage female scientists to participate in the policy debate and enhance their

152 European Commission, “Mapping the Maze: Getting more women to the top in research” – 2008, Luxembourg: Office for Official Publications of the European Communities

153 A6-0165/2008



professional advancement. More specifically, the report calls on the Commission and the Member States to set up networks at European, national and regional level, and to support those that already exist, such as the European Platform of Women Scientists. The creation of a network of networks is also among the priorities of the Helsinki Group on Women in Science (moderated by the European Commission, this group meets

regularly to analyse national and EU policies and to devise strategies to increase the number and improve the conditions of women in science – see Section 2.3). The group has 7 priority actions, among which is the creation of a network of networks. The group specifically mentions cooperation with the European Platform of Women Scientists as one of its working tools.

b) Raising awareness about the issue of women in science

The issue of raising awareness about women in research has been in the forefront since the start of EU activities in the field – i.e. that the under-representation of women in science is a societal and occupational problem, and that this information must be transmitted to the scientific community, to decision makers, and also to public at large. All activities, conferences, publications funded by the EU have had some awareness-raising effect, either directly or indirectly, with the information being largely available on the web. Nevertheless, the impact of all these initiatives is too often restricted to a specialised public: gender experts and the women scientists themselves. Men are rarely aware of the issue, or have biased information that generates hostility to the subject. More has to be done at EU and national level, and more modern instruments should be used to involve young people. Although many projects include increasing awareness as one of their objectives, it is difficult to measure the impact of any such activities. This lack of a proper impact assessment is not compensated by the existing requirement for the project to undergo internal independent evaluation.

Future plans could include: 1) Public campaign on women in science, 2) Eurobarometer survey to look at gender and other stereotypes in science and science education, 3) Cohort studies (involving those children who participated in an initial awareness-raising action, to see how many are interested in science etc compared to non-exposed groups), 4) EC follow-up of activities (which would involve re-allocation of available staff resources, by reducing number of actions but increasing follow-up).

Right from the start of EU activities on Women and Science, there has been emphasis on the importance of increasing the knowledge and awareness of the scientific community at large, the decision makers in particular but also the wider public, on the under-representation of women in science, and the societal and occupational problems that this has created.

It was Commissioner Edith Cresson – at the opening of the Commission-Parliament joint conference on “Women and Science”¹⁵⁴ (April 1998) – who announced that in the 5th Framework Programme (FP5, 1999-2002) the Commission would promote activities to increase the participation of women in research. A campaign to encourage women to participate in research was to be launched, after an invitation to tender. In fact, all the conferences organised, and the various documents published, including the 1999 Communication, have been instruments that have contributed to the debate and raised awareness on the topic of women and science. A full list of the documents published by the European Commission on women in science is included in Annex VI, and the conferences are listed in Annex VII. The most recent conference was organised in Prague

154 European Commission “Women and Science – Proceedings of the conference”- 1998, Luxembourg: Office for Official Publications of the European Communities

in May 2009¹⁵⁵, to celebrate the 10 years of activities by the EU in “women in science”.

The ETAN report¹⁵⁶ (2000) says that one of the main difficulties with equality work is that the complexity of the issue tends to be underestimated. People imagine that discrimination is about “being nasty” to other people. Such forms of discrimination account for just a fraction of cases brought to court. On the whole, discrimination is the result of systems and structures, which manifestly or subconsciously prop up the bread-winner/home-maker myth and the model of the “gender contract” between men and women that goes with it. Raising awareness among all employees is therefore recognised as essential. Sex-disaggregated statistics are helpful in demonstrating the impact that gender has in the allocation of positions. Brainstorms or seminars can help individuals to understand the issue better. Because, as Hilary Rose said in the above-mentioned 1998 conference on “Women and Science”, “no statistics, no problem, no policy”.

The European Council itself, in its Resolution of 2001, invited the Commission to continue

155 “Changing research landscapes to make the most of human potential – 10 years of EU activities on Women in Science, and beyond”, Prague, 14-15 May 2009

156 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality” – 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities



and intensify its efforts to promote the role of women in science and technology. And the conference “Science and Society and Citizens in Europe”¹⁵⁷ in 2000 declared that “the under-representation of women in the world of research and especially the higher levels of responsibility is a crucial aspect, but it cannot simply boil down to that. The low presence of women in research is the effect of a system of exclusion linked both to the way research and the scientific community operate and to more general aspects of society. Beyond increasing the presence of women in the world of science, the development of new relationships between science and society means taking greater account of the specific needs of women in the research agenda and improving the understanding of relations between men and women in society. The agenda for the European Union’s Women in Science activity is evidence of this wealth of options. The *Women and Science* activity, which was launched in 1998, has helped to step up efforts in this area at national level and to improve their consistency. These activities must be continued and extended. Joint efforts are needed to encourage women to get involved in scientific work and to develop the tools for analysing their position in research. The forces that keep women away from research must be studied and a joint effort made to identify the research areas that are of particular interest to women and

157 SEC (2000)1973

to improve the organisation of specific research in this area (“Gender studies”).”

In 2003, the Florence seminar on “Minimising gender bias in the definition and measurement of scientific excellence”¹⁵⁸, recommended taking steps in order to “make all scientists, male and female, aware of the extent and consequences of the problem of gender bias in measuring excellence. In particular, those in charge of screening procedures should be trained to understand gender bias, so as to minimize them. In particular: special training programmes, designed by gender experts, should have been provided, as well as the development of reading material on gender bias in evaluating research.”

The Council – in its Resolution in November 2003¹⁵⁹ – invited the Member States to consider the usefulness of reinforcing initiatives, such as awareness campaigns and digital literacy courses, starting from the early stages of education, aimed at shaping attitudes and combating negative stereotypes and paying specific attention to women belonging to disadvantaged groups and areas.

158 The proceedings of the workshop were published as “Gender and Excellence in the Making” – 2004, European Commission, Luxembourg: Office for Official Publications of the European Communities

159 J.O. 2003/C 317/03 of 27 November 2003

A conference held in Rome in 2003 as part of the ERA-GENDER project (6th Framework Programme), titled “Women in Science: mainstreaming gender equality in the European Research Area”, had a session dedicated to the relationship with the media, and raising awareness about stereotypes. The conclusions of the conference recognised that much needed to be done to increase media knowledge on women scientists and mainstreaming objectives. Increasing the visibility of women scientists should have positive impact on challenging stereotypes in educational and occupational choices, as would paying more attention to gender equality in career guidance activities. Visibility on TV could be particularly effective.

The role of the media was also specifically mentioned in the “Waste of talents: Women and Science in the Enwise countries” report (2003)¹⁶⁰ as an essential instrument in improving the image of science and developing awareness campaigns: journalists should be trained in how to recognise and avoid gender stereotypes, and material on women and science (such as DVDs) should be produced.

Subsequently, the EUROWISTDOM project (European Women in Science TV Drama on Message) was funded (FP6). Its goal was to have more women scientists portrayed in TV drama, and in order to obtain this goal, awareness needed to be raised among the media stakeholders on the subject. This was to be done through organising a competition for script writers and providing professional support to the scriptwriting winners in their development work. This was a novel idea, and a well-focused and professionally implemented project, with the key stakeholders already engaged. TV drama could be a powerful tool for counteracting stereotypes. Unfortunately no appropriate feedback and impact analysis was foreseen in the project, nor carried out by the Commission. The real or potential impact of this activity has not been analysed.

Other awareness-raising activities funded by the Commission have been the documentary film “Femmes de tête”, several thousand copies of which have been distributed on DVD, and the report “Women in European Research” which was broadcast on the EURONEWS channel’s FUTURIS magazine several times in 2006, and is available on the web or as CD-ROM for European TV stations to re-broadcast.

¹⁶⁰ European Commission, “Waste of talents: turning private struggles into a public issue – Women and Science in the Enwise countries” – 2003, Luxembourg: Office for Official Publications of the European Communities



The working document published by the Commission in 2005¹⁶¹ listed the increase of gender awareness among scientists to improve excellence as one of the next priorities for the EU.

In FP6, 33 projects were funded under the “Women and Science” programme, most of them concerned with raising awareness on issues of women’s participation in science (i.e. through conferences, reports) as well as establishing concrete structures (i.e. databases, centres, platforms) that could provide the basis for long term strategies and measures to increase women’s participation in research. The primary target audience were women scientists themselves, but in order to address the gender dimension of the whole research system, the general public, researcher communities and the private sector were also included to a lesser extent. In addition to the already mentioned projects, the following also dealt with awareness-raising: WS-DEBATE for women in science generally, WONBIT for women in biotechnology and ELSA for life sciences.

The “Mid-term assessment of Science and Society activities 2002–2006”, published by the Commission in March 2006, looked at the two main priorities in the field of “Women and Science” related to raising awareness

about women’s participation in science and technology and developing structures for support and monitoring. As a whole, the activities in this area were assessed as successful in achieving their promised goals and could have been expected to significantly strengthen the links between women scientists, policy-makers and the broader scientific community. More important resources allocation and longer-term planning would have considerably increased the impact and effectiveness of the projects. The means used for dissemination were mostly traditional, but of good quality: useful publications, leaflets, web pages were available; a few conferences had been organized. Art or multimedia means had been used only rarely, though they could have had a particular effect in addressing the broader public or students. The media in general had not been sufficiently involved. The European added value had been present in this case from the beginning; moreover, it has been proven that the activities by the Commission played a catalytic role towards encouraging national activities. The Assessment had the following advice for the future: in several of the funded projects it was unclear what the specific dissemination strategies were. Since effective dissemination is also a prerequisite for being able to increase public awareness in the long term, both existing and future projects should be encouraged to strengthen their efforts in this area. The projects should be urged to consider dissemination as a core activity by

161 European Commission “Women and Science – Excellence and Innovation – Gender Equality in Science” – 2005, SEC(2005)370

developing in-depth strategies that include goals as to what groups will be reached, by what means, and how the concrete experiences will be reflexively integrated in a process of on-going improvements of the efforts made.

The WIRDEM report¹⁶² too called for more visibility for women in science. It recommended that the EU as well as national governments support programmes to increase public awareness of the gender issue, e.g. through advertising campaigns, compilation of informative materials, providing the media with special training on gender and science.

Since the beginning of the 7th Framework Programme (FP7), specific activities on awareness-raising have been included in the annual work programmes. Debates between researchers, civil society and other stakeholders concerned about key issues in science and technology, and their relationship with society, have been supported. In particular, two initiatives on gender have been promoted recently. The first is to involve the main research players (forums of public and private higher education establishments, researchers, science academies and research organisations) in a Europe-wide debate on the reasons that limit the

participation of women in research – to identify and implement best practices on gender balance. Two projects have been selected for funding: GenSET and GENDERA. The second initiative will fund a coordinated programme of activities on how much stereotypes and outdated traditions influence the perceptions on women and men in research and how this compares to other professions or roles in society – using debates, exhibitions, science shows, theatre plays, etc, and involving children, parents and teachers in the discussions. The aim is to make the situation of gendered perceptions in research better known by a wider public, and that men and women, boys and girls learn to recognise stereotypes when it comes to gender roles in society. One project has been selected for funding: TWIST. Awareness-raising is planned to be continued in the future activities of FP7, involving the major stakeholders and the best communicators, so as to increase the potential impact of each action.

There were two awareness-raising publications in May 2009: a special edition of the *research*eu* magazine, and a book dedicated to the most famous women scientists in Europe.

The *research*eu* magazine, edited by DG Research but written by independent journalists, gives an overview of the activities promoted in Europe on women and science. This is a free magazine, which is distributed

162 European Commission, "Mapping the Maze: Getting more women to the top in research" – 2008, Luxembourg: Office for Official Publications of the European Communities



widely, in several languages, in both a paper version and electronically. It targets the general public, not only the scientific community, and the idea was to provide a complete picture of the topic of women in science and technology. The book “Women in Science” was written by independent journalists on the basis of a limited list of famous European women scientists approved by the Commission. It is meant to honour all women who have made history in science but whose role has often been ignored by the official historians of science. The book has been distributed in the traditional format but is also available online on the EU website, as is the downloadable audio-book.

Awareness-raising on the gender content of research, however, has received much less attention. Both the Vademecum on Gender Action Plans in FP6, and the explanatory document “Gender in FP7” (Appendix 7 in the Negotiation Guidance Notes)¹⁶³, however, can be considered to have an awareness-raising function. The Gender Impact Assessment for FP5¹⁶⁴ and Gender

Monitoring Studies for FP6¹⁶⁵ could provide information on the subject, but they are written for specialists or people already aware of the problem, and are not specifically meant to be awareness-raising. As regards awareness raising amongst the scientific community, a training toolkit on gender in research has recently been prepared to help scientists to better identify gender aspects in their own research¹⁶⁶.

At the international level, there have been some gender-related activities but these have not been sufficiently systematic nor integrated. The European Commission participated with the gender topic in the AAAS meeting in 2006 and this action will be repeated at the 2010 meeting. It also attended ESOE 2006, and ICWES 2008. In the future, a more systematic approach to international cooperation on women in science would support awareness-raising in other world regions and countries, increasing the potential impact of each initiative promoted by the Commission.

163 “Negotiation guidance notes”, appendix 7, ftp://ftp.cordis.europa.eu/pub/fp7/docs/negotiation_en.pdf

164 European Commission, “Gender in Research, Gender Impact Assessment of the specific programmes of the Fifth Framework Programme” – European Commission – 2001 – Luxembourg: Office for Official Publications of the European Communities

165 European Commission, “Monitoring progress towards Gender Equality in the Sixth Framework Programme” – 2008, Luxembourg: Office for Official Publications of the European Communities

166 European Commission, “Toolkit Gender in EU-funded research” – 2009, Luxembourg: Office for Official Publications of the European Communities

Despite the numerous requests and recommendations to involve men in the issue of women in science, there has been little progress. The involvement of men in women in science has been affected to some degree by the Commission's serious attempts to satisfy the 40% target for each sex in all its boards, panels, conference speaker lists, etc (see Section 3.1). Although the results of the efforts by the Commission in this area have been quite satisfactory, more should be done to increase men's awareness of the issue.

A completely new approach will be implemented by the Commission in the 2010 FP7 Science in Society work programme. The so-called "Mobilisation and Mutual Learning" initiative has been launched. These will be pilot projects that aim to engage the public at large, and also policy makers, scientists and all other stakeholders in the definition of scientific research agendas, and their societal aspects, including gender. Since this is a pilot phase, the expected results of the call, opened in 2009 are not yet clear. The call will close in January 2010 and first results will be known only by mid-2010.

c) Mentoring and role models: bringing women into science and supporting their career path

Role models and mentoring schemes have always been recognised as essential instruments for attracting and retaining girls and women in science and technology studies and careers. Role models are important in counteracting gender stereotypes – but mentoring and role model activities could divert senior women scientists from their own careers, since these are both measures that are costly in terms of time. Role models and mentoring are also of interest to the private sector.

Most European Commission funded activities in this field have been small in scope, and focused on women scientists, and how their role and image could be strengthened. Some of these actions have been very visible at the political level and can be considered to have had a fair amount of impact. But this does not imply long lasting change. From 2010, the Commission intends to support actions to implement change at a structural level, in the research organisations themselves, rather than among women scientists, meaning that the cultural and structural environment that women scientists face in their everyday work will be modernised and improved.



In 1993, seminars organised by the Commission¹⁶⁷ and the European Parliament¹⁶⁸ expressed concern about the lack of women in research institutions in Europe. According to UNESCO's 1996 "World Science Report", the way women progress along the pathway of a scientific career is rather like the way water moves along a pipe with holes in it: simply pumping more women science graduates into the system will not lead to an even spread of women in scientific jobs. Having obtained their science degree, women frequently encounter obstacles in their career, and this results in women being seriously under-represented in scientific posts.

The 1998 conference on "women and science"¹⁶⁹ noted the importance of organising contacts between young people and women scientists and engineers, in order to reduce gender stereotypes as regards science and scientists. But a warning was sounded about the time dedicated by the women to this task – that

the activity should be treated positively in their career assessment and not hinder their career advancement.

The ETAN report¹⁷⁰ (2000) mentions some of the special measures introduced in Member States to address the disadvantages experienced by women in science careers. While not always effective, some modest positive measures can make a crucial difference, such as mentoring and training. Role models are important to young people choosing subjects at school so professional associations and women in science networks could be asked to provide role models for schools. Equally, mentoring work is vital to prevent women students feeling isolated. Mentoring can be helpful to build up contacts with professionals, to understand better the culture, how it works and how to challenge it if need be, for psychological support and so on.

Also in the Helsinki Group report on national policies (2002)¹⁷¹, role models and mentoring schemes were quoted as examples of positive action measures supported in some countries.

167 European Commission "Women in Science – International Workshop – 15th to 16th February 1993, Brussels – Proceedings", edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

168 "The under-representation of women in science and technology. How to improve the situation for women studying/working in S&T?" Seminar organised by the STOA (Scientific and Technological Options Assessment) Committee of the European Parliament, November 1993

169 European Commission "Women and science: Proceedings of the conference Brussels, April 28-29 1998" – 1999, Luxembourg: Office for Official Publications of the European Communities

170 European Commission, "Science Policies in the European Union: Promoting excellence through mainstreaming gender equality" – 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

171 European Commission "The Helsinki Group on Women and Science – National Policies on Women in Science in Europe" – 2002, Luxembourg: Office for Official Publications of the European Communities

It was advised to give them a high profile, for example, on national television and radio, to demonstrate that it is possible to be a senior figure in science and also to be a woman. Similarly, mentoring schemes were useful to link senior women scientists with junior colleagues for advice and support. Unfortunately, it was highlighted that there had been little systematic evaluation of role model and mentoring schemes, and there was the concern that these activities could divert senior women scientists from their own careers, as both measures are costly in terms of time.

The private sector has also demonstrated an interest in such schemes. The STRATA High Level Expert Group published their report “Women in Industrial Research: A wake up call for European industry”¹⁷² in 2003 (see Section 2.2). Among the causes of under-representation of women in science, they found barriers at entry level; the perception of the working environment in industry as inhospitable (which could be explained by the fact that most science and technology fields were – and still are – male-dominated, meaning that women are subject to values and criteria that men established for men, not for women); the shortage of women scientists among senior managers in science and engineering leading to a lack of mentors

and female role models. In order to change this, mentors were mentioned as being valuable to a women’s career development.

To better understand the situation, the 6th Framework Programme’s Science and Society 2004 work programme included a tender to fund a study “To identify and disseminate best practice in science mentoring and science ambassador schemes across Europe”, and the final report was delivered in 2006¹⁷³. The study’s first objective was to generate an overview of science mentoring and science ambassador initiatives across 33 countries in Europe. The second objective was to analyse the various forms of science mentoring through selected case studies, to draw lessons from these, and to propose guidelines for possible future development.

The results confirm that while the concepts of science mentoring and ambassador activities are not always well understood, the need to boost children and young people’s interest in science (as a career) is being given increasing attention. Only very few schemes have reached a level of funding and longevity of activities in order to be considered as having “best” practices. Most schemes have very low operating budgets and depend on volunteers from the scientific or education

172 European Commission, “Women in Industrial Research – A wake-up call for European industry” – 2003, European Commission, Luxembourg: Office for Official Publications of the European Communities

173 European Commission, “Science mentoring and science ambassadors schemes” – 2006, study made by Alasdair Reid, Gaëlle Le Gars and Henry Varga of Technopolis (Belgium)



sector. Corporate or charitable resources are under-exploited. There are few or no national level organisations providing a structured and organised promotion of science mentoring or ambassador activities.

The main recommendation was the creation of a European level action plan for science mentoring and ambassador activities. The opportunities for trans-national learning from existing good practice cases is large and should be exploited through either a network (at least part funded by the Commission) or the launching of specific pilot projects on themes related to science education and promotion for children where existing science mentoring / ambassador programme managers could in turn “mentor” emerging schemes in other countries or regions. The analysis suggests the need to combat the “fragmentation” of the current schemes without imposing overly top-heavy national structures. Hence, science mentoring and ambassador schemes should have a national or regional level super-structure – at the minimum a network coordinator.

The reply to this “fragmentation” problem was the funding (in 2007) of the EUMENTNET project (European Network of Academic Mentoring Programmes for Women Scientists).

Through international exchange and knowledge transfer on mentoring and

training and coaching programmes, the project aimed at creating and offering an enhanced European dimension for the support, promotion and participation of women scientists in the academic field in general and particularly in science decision making, and, through dissemination of best practices, at fostering the implementation of new academic mentoring schemes in the wider Europe. Strengthening the place and role of the established women scientists participating in the mentoring programmes, and giving established women scientists a stronger visibility by networking and exchange of experiences, would reinforce them as role models for the coming generation. The concept was also to support the structuring of the European Research Area (ERA): through the transfer of expertise and the creation of networks for scientists, the project would contribute to maximising human capital and the benefits of diversity, by fully integrating women scientists and by improving their mobility.

In addition, a number of projects have developed mentoring schemes, such as ADVANCE (training in career management, and mentoring relationships for female researchers), IFAC (IT system to present role models, mentors for high school girls), SET ROUTES (ambassadors’ programme to bring role models in science, engineering and technology to schools and universities) and TANDEMplus IDEA (increase number of

female professors through mentoring and personal development programmes).

For role models, a specific call was launched – “Ambassadors for Women and Science” – in the 6th Framework Programme, looking to establish policies favourable to female researchers. Three main projects were funded: DIVA (awareness-raising in high school girls regarding science, gender stereotypes), WomenInNano (female scientists providing role models) and Pallas Athene (ambassadors as role models).

In April 2008, the European Parliament’s Committee on Women’s Rights and Gender Equality discussed a report¹⁷⁴ presented by Britta Thomsen on “Women and Science”. The Parliament stressed “the importance of encouraging girls to take up scientific careers” and suggested “that the Commission and the Member States do so by promoting female researchers as role models and adopting and implementing other measures conducive to achieving this aim”.

174 2007/2206 (INI)

d) Excellence in research: best research carried out by the best researchers in the best conditions

The question of what is excellence in research, and in researchers, and how it should be guaranteed, is not something decided by the European Commission (EC) or the Member States (MS) but by the scientific community itself. It is generally accepted as essential, however, that there must be transparency in the evaluation procedures and criteria. And this is where institutions like the EC or the MS have something to say: it is their role to impose transparency rules and to guarantee that these are applied in all evaluation committees, recruitment or promotion boards, and publication panels. This would guarantee that only excellent science is funded, only clearly evidence-based science is published, that only best talents are recruited, promoted and awarded. This cannot be done if the gender dimension is ignored.

Transparency and openness in procedures is good for science and good for scientists, and especially for women.



In their now famous 1997 study, Christine Wennerås and Agnes Wold¹⁷⁵ showed that in the peer reviews conducted by the Swedish Medical Research Council, to select post-doctorate research grant recipients, reviewers assigned lower scores to women – compared to those assigned to their male colleagues – even when candidates had the same level of productivity.

Since then, many studies in various disciplinary fields have confirmed the weight of the gender variable in assessment procedures that were otherwise considered capable of guaranteeing maximum objectivity. Research has been done on determinants of “academic success”: excellence evaluation, seniority, productivity, etc, and major distortions have been highlighted – “similarity” has often turned out to be the main criterion guiding the process of assessment on the part of reviewers¹⁷⁶. In fact, peer reviewers tend to evaluate publication proposals/funding requests better when they come from groups that share characteristics of the research styles of their own group.

As far as productivity is concerned, the widespread tendency to value as more important the quantity as against the quality

of publications seems to be damaging above all to women. The system of counting publications as a key indicator in assessing scientific productivity has for this reason recently come under discussion. Several studies have demonstrated in fact that, in general, woman researchers tend to publish less than their male colleagues. However, publications by women, on a qualitative analysis, are often shown to be broader and better structured, giving rise, for example, to a higher citation index¹⁷⁷. Furthermore, evaluators tend to overestimate the results of the more famous scientists, whereas those who are less well-known receive much less attention. These are all elements that produce particularly negative effects on women, the real outsiders. The so-called “Mathew effect”¹⁷⁸ (the results are attributed to the most famous researcher in the group) has been widely documented. The so-called “Matilda effect”¹⁷⁹ has also been documented: the results of women researchers are often attributed to their male colleagues, or otherwise underrated and minimised.

175 Wennerås C., Wold A., “Nepotism and Sexism in Peer Review”, in: *Nature*, 387, 1997

176 Guetzkov J., Lamont M., Mallard G., “Originality, Substantive Quality, and Moral Academic Quality in Peer Review”, draft paper for the American Sociological Association, 2003

177 Sonnert G. (with the assistance of Holton G.), “Gender Differences in Science Careers. The Project Access Study”, New Brunswick, NJ, Rutgers University Press, 1995

178 Merton R.K., “The Mathew Effect in Science”, in: *Science*, 56-63, 1968

179 Rossiter M., “The Matilda Effect in Science”, in: *Social Studies of Science*, 23, 1993

During the conference “Women and Science: Making change happen”¹⁸⁰, the then Director General for Research and Scientific Development, Achilleas Mitsos, said that the under-representation of women in science is “the result of systems and structures that undermine the fostering of excellence in science”. He added that “we need to be scientific with gender equality, i.e. developing gender expertise to disentangle the subtlety of bias against women, to design gender-neutral concepts of excellence and merit, to produce evidence based analysis, to develop new perspectives in the research agenda, etc.”

In 2000 the ETAN Report¹⁸¹ mentioned the Swedish study, noting in appreciation the fact that the study had been possible only because of the right in Sweden to freely access public information. The Report asked for “more transparency, and regular scrutiny and review” as essential elements to guarantee the confidence of the whole academic community towards the peer review system. The authors asked for more diversity in evaluation panels. Since “panel

members reproduce panels in their own likeness”, targets should be set to ensure that gender balance is achieved; in addition peer review systems should be scrutinised by research councils, which should also develop equal opportunities policies and benchmarking for good practices.

In 2003 the Commission organised a workshop¹⁸² in Florence to discuss the relatively new subject of what is “excellence” in science. The “performance indicator” related to the number of publications and other accomplishments was scrutinised and “contextualised”, with the conclusion that “Gender bias can occur (1) in the characterisation of scientific excellence, (2) in the criteria used to assess it, (3) in the choice of the explicit and implicit indicators for scientific excellence, (4) in the way the criteria are applied to men and women, (5) in the failure to integrate women in scientific networks, and (6) in the procedures through which criteria are applied to people”. The experts, of course, did not offer any easy solutions but suggested that a deeper analysis of the gendered nature of science was needed. Special training on gender awareness for reviewers was also recommended, as well as the development

180 European Commission, “Women and science: Making change happen” Proceedings of the conference – 3 to 4 April 2000, Luxembourg: Office for Official Publications of the European Communities

181 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

182 European Commission Workshop “Minimising gender bias in the definition and measurement of scientific excellence”, 23-24 October 2003, whose proceedings were published one year later “Gender and Excellence in the making”- 2004, Luxembourg: Office for Official Publications of the European Communities



of reading material on gender bias in evaluating research.

In 2005, the “Gender and Excellence” staff working document¹⁸³ stated that the widespread call for more systematic and structured support for gender research was not being addressed appropriately by the current European research programmes. Its proposals: to establish gender research as a recognised item in European research funding, and to reflect on integrating the gender dimension in new and emerging areas of scientific research (foresight, nanotechnologies, security, technological platforms, and innovation). As a consequence, in the 6th Framework Programme’s 2005 work programme, a call was published to mainstream gender in various areas of research and technological development (especially engineering professions). Projects included WOMENCORE (gender and women in construction research), PROMETEA (gender and women in engineering careers), TRANSGEN (gender and women in the transport sector), WOSISTER (gender and women in two very different technologies: agricultural implements for rural application and teleservices), as well as research projects on gender in research: KNOWING (examining the role of gender in the production of

knowledge contexts and cultures in an East-West perspective in two scientific fields, sociology and biology), UPGEM (local cultural-historical processes behind the “brain-drain” of female physicists), and GENDER-BASIC (integrating the gender dimension in basic/preclinical research of life science).

Many authors continued to suggest that the existing system of definition and evaluation of scientific excellence is not as gender-neutral as it claims to be. After Wennerås and Wold’s study, a study by Bornmann et al (2007)¹⁸⁴ showed “evidence of robust gender differences in grant award procedures ... among grant applicants, men have statistically significant greater odds of receiving grants than women by about 7%”. Even where the grant-awarding processes are gender-neutral, women are less likely to apply for funding, reflecting deep-rooted differences in grant application behaviour, and they are also less likely to be eligible to apply for such funding because they are in fixed-term positions” (Blake and La Valle 2000)¹⁸⁵.

¹⁸³ European Commission, “Women and Science – Excellence and Innovation – Gender Equality in Science” – SEC(2005)370 – April 2005

¹⁸⁴ Bornmann, L., Mutz, R. and Daniel, H.-D. (2007) Gender differences in grant peer review: A meta-analysis, accepted for publication by the Journal of Infometrics, online, <http://arxiv.org/ftp/math/papers/0701/0701537.pdf>

¹⁸⁵ Blake, M. and La Valle, I. (2000) “Who Applies for Research Funding?: Key factors shaping funding application behaviour among women and men in British higher education institutions”, a NatCen report for the UK Research Councils and the Wellcome Trust, <http://www.wellcome.ac.uk/assets/wtd003209.pdf>

The report by the WIRDEM working group, “Mapping the Maze: Getting more women to the top in research”¹⁸⁶, also looked at quality in research and concluded that the “general principles to ensure quality are transparency, clarity and accessibility – in the selection of candidates for a position, in the funding of projects, as well as in the regular publication of criteria and procedures, and results such as success rates or application rates”.

As a consequence of the various recommendations, the European Commission decided to create a new group of experts to analyse the selection procedures for the allocation of research funds and the comparative success rates for women and men – i.e. to examine the impact of gender in the evaluation of scientific excellence, to include best practice examples and good indicators of excellence, and make recommendations for an improved definition and measurement of scientific excellence, free from gender bias. The report “The Gender Challenge in Research Funding – Assessing the European National Scenes”¹⁸⁷ was published in 2009, and it recommends encouraging and training women to apply for more funding; improving gender balance

among the gatekeepers of research funding; organising gender training for all involved in the funding process; gender monitoring and publishing of funding statistics on a regular basis; generally improving accountability and transparency in research funding, publishing procedures and criteria, using international evaluators, effectively avoiding conflicts of interest, providing feedback and instituting grievance procedures.

In the 7th Framework Programme’s Capacities work programme, Science in Society 2010, a call was launched on “Assessing how research outputs at individual researcher level are evaluated and measured”. It aims at providing insight into the dynamics of the European science and research system and the ways in which research outputs, at individual researcher level, are measured and evaluated, especially in the light of the possibilities provided by the digital age. The ways in which quality, success, excellence and impact of scientific production are measured and evaluated are intrinsically linked to the efficiency and success of the science system. Analysis also includes the gender dimension in relation to the system of career evaluation and performance measurement i.e. in what ways does the current science system pose specific obstacles to women in research careers, and how such systemic weaknesses could be addressed. In this way, the scientific community’s awareness on the unfair status quo should be raised and it could be

186 European Commission, “Mapping the Maze: Getting more women to the top in research” – 2008, Luxembourg: Office for Official Publications of the European Communities

187 European Commission, “The Gender Challenge in Research Funding – Assessing the European national scenes” – 2009, Luxembourg: Office for Official Publications of the European Communities



engaged in a debate on how to solve the issue.

Transparent procedures for scientific evaluation and selection have also been proposed. The Commission invited research organisations to adopt the Code of Conduct for the recruitment of researchers (2005)¹⁸⁸, where the principle of transparency is clearly stated as an essential basis for career evaluation systems. This has been repeated

in the 2008 Communication¹⁸⁹ on better careers and mobility for researchers. Adopting the Code is voluntary, and to date it has been adopted by only a minority of EU research institutions and universities. The National Action Plan foreseen for the implementation of the 2008 Communication will hopefully produce better results.

188 European Commission, "Code of Conduct for the Recruitment of Researchers", 2005

189 COM(2008)317 final – Communication from the Commission to the Council and the European Parliament: "Better Careers and More Mobility: A European Partnership For Researchers"

e) Gender Budgeting

Gender budgeting is a relatively new approach to ensure gender responsive financial and budgetary policies and processes, which essentially means that any budget process should look at the differentiated needs of men and women.

Gender budgeting should not be considered as an end in itself, but as an integral part of the gender mainstreaming strategy to achieve gender equality in society. "Gender budgeting is defined as the application of gender mainstreaming in the budgetary process. This entails a gender-based assessment of budgets, incorporating a gender perspective at all levels of the budgetary process and restructuring revenues and expenditures in order to promote gender equality." (Council of Europe 2005, Gender Budgeting Report,

Strasbourg). Importantly, gender budgeting does not mean establishing separate budget lines for women or men, or only considering those budget lines which have an explicit gender dimension or necessarily increasing spending on men or women.¹⁹⁰ Depending on national, regional, or local circumstances, it is essential that gender budgeting initiatives take

190 The United Nations Development fund for Women (2007) <http://www.gender-budgets.org/content/view/15/187/>

all steps of the budgeting process into account and promote gender budgeting throughout the budgetary process: planning, adoption, implementation according to law and general guidelines, auditing of the budget, and evaluation.¹⁹¹

The ETAN report¹⁹² reviewed the position of women in science and technology and concluded that the under-representation of women threatens the goals of science in achieving excellence, as well as being wasteful and unjust. The report quoted among the various principles of mainstreaming, the need to include equality “just like any other organisational function, such as budgeting or annual reporting. It means integrating the principle of gender equality into mission statements and goals, allocating budgets for activities associated with it, and systematically incorporating equality into training, line management, performance review and annual reporting systems”. Even if not explicit, this could be considered the first call for gender budgeting. The report also suggested measures ensuring fairness in research funding and the use of financial incentives to ensure progress on the equality agenda.

191 Council of Europe (2005) “Gender budgeting”.

192 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality” – 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

In 2003 the European Parliament called¹⁹³ on the Commission and the Member States to carry out gender budgeting in all their policies, and a number of Member States have taken initial steps to implement gender budgeting on a local, regional or national level in recent years. But it was the Commission Staff Working Document¹⁹⁴ that brought forward the aspect of financial resources and is the first to mention in particular gender budgeting in the research sector.

In order to analyse the possibilities for gender budgeting in the area of research, a project was funded under the 6th Framework Programme titled GB-Management (see annex V)¹⁹⁵. The project focused on universities in Austria, Germany and Poland, and looked at how the budgeting process works in these research organisations. The aim was to see which parts of the gender budgeting process should be implemented to achieve a gender responsive budgeting. The main findings show that the important aspects of university reform such as transparency, target-oriented governance

193 European Parliament: Resolution on gender budgeting – building public budgets from a gender perspective 2002/2198 (INI), 3. July 2003, P5_TA(2003)0323, para. 14

194 European Commission, “Women and Science: Excellence and Innovation – Gender Equality in Science” – SEC(2005) 370- 2005

195 A. Rothe, et al. “Gender Budgeting as a Management Strategy for Gender Equality at Universities” – Frauenakademie München e.V. – München 2008



and financial control are perceived as good starting points for gender equality as well. And the objectives of the new academic steering models, e.g. providing transparency concerning the use of funds, the assignment of funds, and the objectives achieved, are partially compatible with the objectives of Gender Budgeting". Consequently, "the implementation of Gender Budgeting at universities would mean the integration of gender equality objectives into governance and control and to link policy objectives of gender equality with the resource allocation. However, a high degree of resistance is to be expected as the reforms are nevertheless interwoven with a very traditional organisational culture in science."

The project found that financial matters were generally labelled as purely technical procedures which only financial experts can understand. In this way, policy dimensions are excluded from budgeting decisions. In addition decision making concerning budgeting is generally a male dominated process, where women are only marginally included. The open-mindedness towards gender equality at the universities is not always followed by an appropriate readiness to really act on behalf of this aim. The projects' recommendations included, for the universities, the institutionalisation of Gender Impact Assessments, the equal participation of women and men and the inclusion of gender equality institutions in all phases of the budgeting process, overall transparency

of the budgeting process, and the integration of gender objectives and gender analyses into all parts of the accounting system. Implementation of gender sensitive measures in personnel recruiting were also seen as necessary, as well the inclusion of the "gender" aspect in any system of quality accreditation. The project also called for the implementation of gender budgeting into all research activities of the EU and more funding for projects on implementing gender mainstreaming and gender budgeting in research.

At EU level, a feasibility study was launched in 2008 by DG Budget responding to a request from the European Parliament to progress in gender budgeting. It said that gender budgeting could imply better integration of gender issues in the budgetary cycle at EU level, through identification of gender sensitive policy areas to set objectives and gather relevant information, analyse impacts and report on gender funding. The study to assess the feasibility and options for introducing elements of gender budgeting in the EU budgetary process was finalised in autumn 2008. It suggested options for exploring gender budgeting further at EU level, building on existing tools, structures and procedures. One of the suggestions was the integration of a gender dimension in activity statements. A pilot implementation phase is on-going in various Directorates-General, and guidelines

¹⁹⁶on how to mainstream gender in budget lines have been provided. Internal results will be available in 2010.

Some Member States have already implemented gender budgeting as a mainstreaming tool. The WIRDEM report¹⁹⁷

¹⁹⁶ Toolkit to assess social impacts: http://www.cc.cec/home/dgserv/sg/i/impact/sector_tools_en.htm
A Guide to Gender Impact Assessment: http://ec.europa.eu/employment_social/gender_equality/docs/gender/gender_en.pdf
Manual for Gender Mainstreaming Employment Social Inclusion and Social Protection Policies: http://ec.europa.eu/employment_social/publications/booklets/equality/index_en.htm

¹⁹⁷ European Commission, "Mapping the Maze: Getting more women to the top in research" – 2008, Luxembourg: Office for Official Publications of the European Communities

writes that the Norwegian ministries have a statutory requirement to carry out a gender-budgeting exercise. The University of Oslo has adopted this policy, and a working group was set up to look at the distribution of funds (between male and female staff) within selected faculties. The main task was to evaluate, from an equal opportunities point of view, the plans and budgets of the university, with the aim of initiating corrective action where necessary to ensure a fair and effective use of resources. The committee, led by the vice-rector, includes members with expertise in equal opportunities, personnel management, finance, planning, and faculty leadership.

f) Young people and science: school, careers and gender

Europe needs top quality science education that will attract young people into science careers and also result in science-aware citizens. Although education is the responsibility of national governments, the European Commission has a role in encouraging cooperation and the sharing of good practice amongst Member States.

DG Research has encouraged the involvement of scientists and teachers in efforts to improve the experience of children with genuine science and to create excitement about the role of science in society. Activities in formal and informal educational settings (schools, museums, science centres) have been funded to encourage girls and boys to select science careers, to train or update teachers in teaching science and also to be more gender aware about the process, and to encourage parents, teachers and young people to challenge the stereotypes about women in science.

These activities attempt to counteract two problems: science subjects are not popular at school so young people are not choosing science careers (because of the gender stereotyping of scientific subjects and career choices, this is an even bigger problem for girls), and the way science is taught at school is particularly off-putting for girls.



In order to reach the goals set by the Lisbon Agenda – sustainable socio-economic growth in a knowledge-based society – Europe needs top quality science education, a point also made by the report “Europe Needs More Scientists” (2004)¹⁹⁸. This is because we wish to attract young people into science careers and also because we want European citizens to be science-aware. Although it is the national governments who have jurisdiction over education, the European Commission has a role in encouraging communication and the sharing of good practice across Member States. In research, the Science and Society Programme supports this goal of helping to make school science exciting and effective.

Although there are large differences between countries with respect to the proportion of students enrolled in science, technology and mathematics higher education studies, the recruitment figures are generally low. Furthermore, the gender differences vary from one country to another, but, in most countries, men outnumber women in physics, engineering, technology and mathematics studies, while the gender balance is shifted towards women in subjects like biology, medicine, veterinary medicine and environmental science. At school level,

there is concern about the low aspirations of girls regarding science subjects, and the gender stereotyping of scientific subjects and careers choices more generally.

Through the Framework Programme, DG Research has encouraged the involvement of scientists and teachers in efforts to improve the experience of children with genuine science and to create excitement about the role of science in society. Activities in formal and informal educational settings (schools, museums, science centres) have been funded to encourage girls and boys to select science careers, to train or update teachers in teaching science and also to be more gender aware about the process, and to encourage parents, teachers and young people to challenge the stereotypes about women in science.

At the same time, DG Education and Culture has been promoting an increase in “participation in Mathematics, Science and Technology” among young people and adults as part of the “European Objectives for Education and Training”. This is a longstanding activity that follows the methodology of the open method of coordination of administrative systems at the Member States level. There are three priority issues relating to the objective: decrease by 50% the existing gender gap in science studies by 2010; university–school partnerships are a potentially powerful engine for promoting reform in science

198 European Commission, Gago et al., “Report by the High Level Group on Increasing Human Resources for Science and Technology in Europe” – 2004, Luxembourg: Office for Official Publications of the European Communities

education; identifying and exchanging good practice at the European level can help in systemic reform.

Connecting citizens with science has been a long-standing aim in the Commission's research activities. In 1993, Antonio Ruberti Commissioner for Research (formerly DG XII) launched the "European Week for Scientific and Technological Culture". The 4th Framework Programme¹⁹⁹ (1994-98) saw the inclusion of a new specific programme on socio-economic science, which also included research on education and training. The objective was to assist Member States in their efforts to develop links between research, education and training and improve their education and training systems through the dissemination of good practice. The decision said "In compliance with the principle of subsidiarity, these activities were to complement Member States' activities and to be coherent with Community activities in the field of education and training". Only two projects – out of the 38 funded – dealt with science education. Under the 5th Framework Programme (FP5), none of the 20 funded research or networking activities in the area of education targeted science, but there was an action to raise public awareness about science and technology. About 16 million euro was spent in FP5 on funding 54 projects, of which 22 targeted

young people and their teachers through informal science education-based activities.

Following the 2000 Lisbon Summit, the Council resolutions of June 2001²⁰⁰ encouraged Member States and the European Commission to boost science education, in particular by reinforcing the coordination of European and national activities and policies in this field, while emphasising the need to develop strategies to attract the younger generation to careers in science and technology.

The European Parliament has also demonstrated its concern about the lack of gender awareness in science education. In its 1999 Report on "Women and Science"²⁰¹, it declared that "the education system in many EU MS does not equip girls and women to work effectively in an increasingly technological world. Discrimination and lack of encouragement begin very early in the education systems. Some MS still allow science and maths textbooks to be used which barely acknowledge the existence of the female gender! Allowing the premature abandonment of science studies, largely by girls, has led in the past to generations of women with little or no science education. Fortunately this situation seems to have improved at primary and junior secondary

199 Decision No 1110/94/EC – O.J. L 126/01 of 18 May 1994

200 O.J. 2001/C 199/1 of 14 July 2001

201 EP Report "Women and science" A5-0082/1999 – PE231.841/99



school level, although the post-16 education of girls is still unbalanced, with no science or maths component in some countries and the proportion of young women studying physics (necessary for any sort of engineering course) post-16 is very low indeed. Of course the EU has little competence for the school curriculum in MS but the situation could be examined in terms of our competitiveness and preparedness for a knowledge based society.” The EP called on the Commission to consider a number of measures including techniques which provide support for girls in science classes.

The conference in 1999 on “Women and Science: better career advice in schools and universities on potential careers in science, engineering and technology (SET)”²⁰², concluded that the elimination of gender stereotypes in teaching science at school was one of the measures that would be helpful in increasing the number of scientists by bringing more women into science. Teachers needed to be aware of behavioural differences between boys and girls, in order to help the latter to not under-estimate their scientific abilities. The recommendations included training teachers, offering better careers advice on science and technology, highlighting the impact of science on society and the environment, and organising

contacts between women scientist and engineers with young people (but being mindful, due to the time burden, that this worthy activity would not necessarily advance the women’s careers).

The ETAN report²⁰³ (2000) asked several questions on the issues of science education for girls: What are the exclusionary mechanisms that inhibit women from choosing science subjects? Could careers guidance help? What about the stereotypical images of science as a male domain: how could these be challenged? Several initiatives and projects to tackle these issues did exist at national level, but they “are like a drop in the ocean”. The ETAN expert group called for more strategic long-term approaches, and serious investment in resources, thinking and innovative ways of organising educational institutions to ensure potential scientists are not lost because of their sex. The following issues were raised: 1) new *pedagogic approaches* should be promoted (taking into account different and age-dependent learning styles for girls and boys, and developing gender aware teaching methods and materials); 2) *how to foster interest of girls in science and technology* (girls tend to be more interested in problem oriented approaches so better links with industry and

202 European Commission, “Women and science: Proceedings of the conference Brussels, April 28-29 1998” – 1999, Luxembourg: Office for Official Publications of the European Communities

203 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality” – 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

the public service should be fostered); 3) *role models and mentoring schemes* are important; 4) *extra-school efforts against stereotyping of science and scientists* should be made (conventional images of science and scientists held by young people need to be challenged in media, games, informal science education settings).

The above issues raised by the ETAN report have been addressed and promoted at EU level as follows.

1. Pedagogical approaches

Already in 2001, the Science and Society Action Plan included a specific action on science education: to support educational research and development projects specific to science and technology. There would be an exchange of experience among teachers, also conferences and public debate on the teaching of science and technology. The dissemination of the obtained results was to make use of WEEST (Women Education and Employment in Science and Technology)²⁰⁴, as a way of making gendered science education methods better known among science teachers and other stakeholders.

The Helsinki Group's National Policies report (2002) mentioned the need for a "gender

proofing pedagogy of science education. ... This is a reference to the kinds of examples used in experiments, illustrations in textbooks, or indeed, the educational psychology research on the different ways males and females learn. Given that males have traditionally taught science to males, and in many countries, in single sex settings, pedagogy and textbooks have emerged that may in effect act as "chill factors" or exclusionary mechanisms for women."

Several calls for proposals were launched in the 6th Framework Programme (FP6, 2002-2006) Science and Society Programme to foster science education and transfer best practice. In 2003, the focus was on the establishment of a pan-European initiative to enhance science teaching in schools and to raise the interest and motivation of boys and girls in science and technology. Four projects were funded, grouped in a cluster called NUCLEUS. Two of these focused specifically on primary school science teaching: SCIENCEDUC (inquiry based science teaching) and ESTI (science teacher training), while the others focused on informal science education settings (CISCI and Pencil).

To better understand the potential of pedagogical approaches for pupils of mid-secondary schools, the FP6 Science and Society programme funded in 2004 a study "To identify and disseminate within Europe best practices in the context of science teaching that places science and technology

²⁰⁴ Funded in 1999 by the European Parliament initiative CONNECT and managed by Città della Scienza, Naples



into meaningful learning contexts”.²⁰⁵ The study focused on experiences regarding applications of context-based methodologies in science teaching implemented in schools (formal settings) and out-of school (non-formal and informal settings, e.g. science parks, science museums, etc). The study found that the gender issue emerged as a distinctive factor, with the “role models” being teachers themselves, as well as other professionals who take part in laboratory experiments or field research activities. Media strategies and awareness raising campaigns, however, make it possible to reach out to broad audiences and to start instilling a “gender conscience”.

The 2004 Science and Society work programme requested proposals for actions implementing new science teaching methods in primary school curricula. Several projects were funded: PLASCIGARDENS (partnerships between primary schools teachers and local botanic gardens), WASTEWATERRESOURCES (hands-on ecology), POLLEN (inquiry based approach), ESCALATE (using argumentation based methods) and ROBERTA-goes-EU (addressing specifically girls and robotics). Other projects focused more on children from disadvantaged groups or/and migrants (EC FUN and PROMISE specifically

addressing migrant girls), or informal science education settings (Hands on – Brains on and PhysFun).

In 2005 the focus was on comparing science teaching methodologies and practices, taking into account gender specific actions; understanding differences between girls’ and boys’ perception of science studies; understanding how performance indicators / assessment strategies affect priority setting in science education. Seven projects were funded, and those focusing on teaching methods were: FORM-IT (networking scientists and education experts to innovate didactic materials and methods); PARSEL (identify teaching material that brings teacher practice closer to advanced research); EFSUPS (scientific understanding in primary school through sustainable development) and POPBL (science teaching by project orientation – improving the transition to university and labour market for boys and girls). Other projects addressed secondary school pupils in order to attract them to scientific careers. In the 2006 work programme – the first of the 7th Framework Programme (2007-2013), the Commission promoted context based and inquiry based science teaching. Two proposals were selected for funding: HIPST (context based) and Mind the Gap (inquiry based, secondary schools).

²⁰⁵ European Commission, “Best practices in the context of science teaching” Study by SCIENTER (Italy) – Final report 2006

In 2007 a Mid-Term Assessment of Science and Society Activities promoted in FP6²⁰⁶ was published. It identified some strengths and weaknesses of the science education activities. The funded projects were considered too small in scale compared to the educational enterprise that they were intended to influence. If greater resources had been available, the projects would have been less scattered across science subject areas and would have provided greater coverage. Considering the limited resources available, the experts found the focus on only two dimensions of action as appropriate: better learning outcomes through inquiry-based teaching methods and broader recruitment to science careers through reaching out to women and migrant groups. The major weakness was identified in the dissemination aspects, which were considered not appropriate and not sufficient. In particular, there was not sufficient involvement and engagement of school and curricula decision makers. It was difficult to see how innovative activities could have had a sustainable influence on the workings of educational settings without serious involvement from educational policy-making authorities. The experts' recommendations included: focus the resources on a few kinds of actions; continue identifying and disseminating best practices

in teacher professional development and systemic educational reform; promote the development of structures for teacher professional development; support research on the culturally-specific issues of gender and disadvantaged status; include students and young people in projects in all the Science and Society's thematic areas; promoting reform in existing science teaching practices will require more coordination of the activities of DG Research, DG Education and Culture, university-school partnerships, as well as national and local educational authorities; broadening institutional participation in science education (including industry) should remain an area of priority.

At the end of 2006, a small working group with 5 well-known experts in science education was created to draw on the various Member State experiences and "propose European initiatives in favour of a wider balancing of educational approaches", as stated by its chairman Member of the European Parliament, Michel Rocard²⁰⁷. The group was asked to consider what action could be taken at the European level to prepare young people for active participation in the emerging knowledge-based society where the creation and use of scientific knowledge are assuming ever increasing importance. Several issues were examined: what are the most effective and innovative

206 "Mid-Term Assessment of Science and Society Activities 2002-2006 – Final Report" – 22 March 2007

207 Interview with the magazine Research*EU – June 2007



techniques that have been developed in the area of science teaching, that motivate young people to want to understand scientific principles and the ways that science is done; dissemination of effective practice, adapting materials to local conditions; how to improve the links between formal and informal science education, and between science education and careers in science; how to increase participation of parents, scientists, researchers and local communities. The resulting Rocard Report²⁰⁸ was published in June 2007, calling for the introduction of inquiry-based science education (IBSE) in schools, and teacher training in IBSE. “Specific attention should be given ... to raising the participation of girls in key school science subjects and to increasing their self-confidence in science”.

Following these recommendations, the first 7th Framework Programme’s work programmes (2007 and 2008) focused on IBSE methods and on dissemination actions. Several projects were funded: S-TEAM in 2008, Fibonacci, Establish and Primas in 2009. In 2008, a public procurement procedure was launched to create an internet platform for the dissemination of information and best practices regarding the inquiry based teaching methods that have been developed under FP6 and FP7. The

information and materials will be available in several languages, and it will be possible to ask for translation into a missing EU language.

It should be noted that the gender aspect has become a compulsory feature in all FP7 projects on science education, and is taken into account in the evaluation process for projects.

Referring to a more recent development, two Ministers for Education François Biltgen (LUX) and José Mariano Gago (PT) prepared a document in April 2009²⁰⁹ in which they proposed a number of Priority Actions to improve the attractiveness of RTD careers and the conditions for the mobility of researchers in Europe. The document referred to the need to “increase the number and share of young people choosing to study science and technology related subjects”, and suggested actions to “promote the awareness of young people with respect to science and technology; improve science and technology education and help the development of science networks of schools, science teachers and researchers both nationally and internationally; support actions and institutions devoted to the promotion of scientific culture and the enlargement of the

208 European Commission, “Science education NOW: a renewed pedagogy for the future of Europe” – 2007, Luxembourg: Office for Official Publications of the European Communities

209 Council of the European Union “Better careers and more mobility: A European partnership for researchers – information from the Commission and the Presidency”, 10003/09, 18/05/2009

social constituency for scientific and technological development, namely science centres and science museums”. The text was presented by the signatories, after input and suggestions from their research minister colleagues, to the informal Competitiveness Council of 4 May 2009, and received its general agreement.

2) How to foster the interest of girls in science and technology subjects and careers

Various studies demonstrate that young people all over the world say that they want work to be important and meaningful; however, what young people perceive to be important and meaningful differs amongst genders and cultures. For example, boys put a higher priority on factors such as good wages and independence in the work situation, whereas girls value working with other people and idealistic motives like “helping others” relatively higher. Young people compare the image of science, technology, engineering and mathematics (STEM) studies that they get from peers, family, mass media, leisure-time activities, and the promotional material from educational institutions, with their priorities and aspirations, and if it does not match the image they have of who they want to be/ what they want to do, they will choose not to pursue an education and career in STEM.

Already in 2001, during the conference “Gender and Research”²¹⁰, a full session was dedicated to “Reaching out to schools and society at large”, where it was proposed that recognising the relevance of the gender dimension in science would increase its attractiveness to young people (both boys and girls) and would open up science to broader societal concerns. It looked at the best ways of integrating gender equality into science teaching at the earliest stages, and into science awareness-raising activities. The session asked, for example, why girls are more likely to choose certain areas of science, such as biology and pharmacy, rather than physics and information technology. Are these general trends or a response to socialisation processes? Why do both girls and boys tend to avoid mathematics? Is it linked to the way in which disciplines are taught and knowledge transferred? Understanding these differences in choices requires looking closely at the attitudes expressed by girls and boys towards different areas of science. It means breaking down deep-seated stereotypes and getting at the roots of “science imagination”.

In 2003, the Commission Communication titled “Researchers in ERA: one profession,

²¹⁰ European Commission, “Gender & Research – 8/9 November 2001 Conference Proceedings” – 2001, Luxembourg: Office for Official Publications of the European Communities



multiple careers”²¹¹, stated that achieving the challenging objectives set at Lisbon and Barcelona²¹² would also be affected by the perceptions of young students of career prospects and employability in the research sector. It declared: “Beyond specific measures, it is of utmost importance that “gender lenses” be applied in analysing research careers. This implies recognising and taking account of the different impacts that the structuring characteristics of careers in R&D have on male and female researchers. This is also true when considering how to make science attractive to young people at an early stage: maximising the attractiveness requires a wide spectrum of approaches to trigger the interests of both boys and girls. This is what mainstreaming calls for, and this is why the gender dimension has the potential to produce not only true gender equality, but also to open up new perspectives”.

Subsequently, numerous Framework Programme projects have been funded to provide understanding about what attracts girls and boys to scientific and technological careers. In 2003 more informal science

education projects were funded, but in 2004, the projects “Hands on – Brains on” and PHYSFUN aimed to reinforce the links between universities, or industry, and schools and to strengthen the education to employment transition. Both formal and informal education were involved and hands-on or context based learning methods were used. In 2005 a specific call was published on how to link science education to scientific/technological careers, funding actions aiming at understanding and comparing differences between boys’ and girls’ perception of science, engineering and technology (SET) studies. Three projects were funded: Material Sciences (seen through everyday applications in metals, ceramics, plastics), UPDATE (addressing girls dropping out from technology education) and GAPP (understanding why girls lose interest in science; research was carried out to explore how the perception of SET studies and professions affects interest, motivation and choice of subjects at school, at university and consequently in a young person’s career)²¹³.

In 2007 the Framework Programme call had two objectives: to reconcile scientific research with science teaching, and to change the image of science and scientists held by young people. Two projects were

211 COM(2003)436

212 In 2003, the Council (Education Ministers) adopted conclusions on Reference Levels of Average European Performance in Education and Training (Benchmarks). In the area of mathematics, science and technology, the Council called for an increase of 15% in the total number of graduates by 2010, while at the same time decreasing the level of gender imbalance (Council Conclusions of 5 May 2003 – Official Journal of the EU C 134/4 of 07.06.2003)

213 “Bringing young people closer to science and technology professions – A gender perspective in a practical handbook” –2008– www.gendergapp.eu

funded under the first objective: Carboschool+ (partnership among carbon science laboratories and secondary schools on climate change and reduction of greenhouse gas emissions) and Coreflect (developing a web based science inquiry learning environment). Three projects came under the second objective: EUCUNET (create a European network of “children’s universities”: 100 European universities that open their doors and have lectures during the summer holidays, for children aged 7-12), YOSCIWEB (analysis of the scientific websites already existing on the basis of their targeted audience: to provide tools and methods to increase the impact of scientific communication on young people) and MOTIVATION (investigate the representation of science in youth magazines, TV, etc; find out if parents, peers, school contribute towards a stereotypical perception of SET).

In 2008, the goal was to fund Framework Programme projects that would deepen our knowledge about what drives young people’s, especially girls’ choices regarding science, engineering and technology (SET) careers, and what higher education and research institutions could do to influence these choices. Two research projects were funded: IRIS (what are the teaching/learning approaches in SET education at upper secondary level that encourage or discourage (female) students to choose a SET career; at higher education level to continue their study; for female students to

drop out; what are the success factors for recruiting and retaining more (female) students) and HELENA (does the attractiveness of SET differ from males to females because of its gendered masculine representation and the lack of interdisciplinary subjects in SET curricula?) (see annex V).

The Euro-Barometer Report “Young people and science”²¹⁴, published in October 2008, was not very encouraging regarding the prospect of more young people choosing science subjects and careers. Only a third of respondents said they were interested in science and technology news, with young men showing more interest than young women (75% vs. 59%). When presented with several choices of scientific study, only a minority said that would even consider them: most would choose social sciences, economics or business studies. The least popular was mathematics. Young women were more likely to study natural sciences or mathematics in order to become a health professional, teacher or a public sector researcher. Young men, however, were more likely to become an engineer, technician or a private sector researcher.²¹⁵

3) Mentoring and role models

214 Flash EB series # 239 -The Gallup Organisation – 2008

215 According to Eurostat, the percentage of females studying science/mathematics/computing in tertiary education has actually decreased from 1998 to 2007



A wide range of activities in this area has been covered by funded Framework Programme projects. See Section 3.3 c) for details.

4) Extra-school efforts against stereotyping science and scientists

The main objective of informal education activities is formulated in terms of bringing young people (and the general public) closer to scientists and science, with the long-term goal of changing the image of science and scientists, and encouraging scientific careers. The potential implementers of such initiatives are all those involved in the informal science education effort: science centres, science museums, teachers associations, media, etc. Activities have taken the form of science festivals, science weeks, science cities, science shops, science café, etc.

The 6th Framework Programme's Science and Society activities in this area had been preceded by some limited public awareness-raising projects in the 5th Framework Programme. Most activity had been at a national level, with a relatively low level of funding and no European cooperation. Fragmentation was the major problem: a number of science weeks and festivals of good quality in many cities and regions had only local impact with no systematic partnerships between them and no clear

structure for exchanging best practice; science event professionals lacked a forum for setting up partnerships, and interactive exhibitions or information products on science rarely circulated in Europe due to the transport and translation costs involved.

During FP6, studies were conducted on how to better communicate science, journalists were trained on science, and scientists trained on communication. Already in 2000, the ETAN report had suggested that more should be done in enhancing journalists' knowledge about girls' science education and women scientists, so that women scientists would receive more exposure in the media and thereby counteract stereotypical images of scientists. This is an area where women scientists themselves, and their networks, could have been more active.

The major problem for activities on informal science education promoted by DG Research is the lack of consistent and shared indicators at the European level, against which the impact and effectiveness of these activities could be assessed. Such indicators should not only be validated in their relevance and consistency by scholars and practitioners, but should reflect as far as possible the multiple points of view of relevant actors and stakeholders, including minorities and vulnerable groups.

g) Mainstreaming gender in human resources management

A shift in focus has been occurring in European Commission funded activities: from individual-focused to institution-centred. This means adapting the institutions and their structures to individual needs, and not the other way around, which is usually the case. The objective is to shift from creating programmes and initiatives supporting women researchers in adapting to their research environment, to creating an equitable environment for men and women, where both professional and private lives are valued. In addition, to ensure the highest quality of scientific research, it is essential that universities and research institutions recruit and promote the best people, and provide them with best available conditions and working culture. Consequently, management procedures should be gender aware, and recruitment and promotion procedures must be transparent, open and equal.

The ETAN report (2001)²¹⁶ recognised that many universities and research institutions “still operate archaic, opaque recruitment procedures for key positions, leaving themselves open to criticisms of dependence upon an “old boy network” to secure succession routes. Patronage remains an important element of the academic culture. It’s hard to assess its impact in the allocation of opportunities such as fellowships, post and committees membership in absence of transparent selection and promotion procedures”. The Report called for “Building equality into the culture and organisation”, whereby equality would become a natural

part of the “way we do things round here”. Mainstreaming equality should be treated just like any other organisational function, such as budgeting or annual reporting. It would mean integrating the principle of gender equality into mission statements and goals, allocating budgets for activities associated with it, and systematically incorporating equality into training, line management, performance review and annual reporting systems. It would require appropriate support structures to ensure its implementation and assessment.

The Helsinki Group report²¹⁷ (2002) also described the human resources management

²¹⁶ European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality” – 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

²¹⁷ European Commission, “The Helsinki Group on Women and Science – National policies on women and science in Europe” – 2002, Luxembourg: Office for Official Publications of the European Communities



of universities as “out of date and relying too heavily on nepotism, patronage and exclusively male networks as recruitment pools”. The report called for the modernization of management, including transparency in appointments and promotion procedures (advertising all posts, with clear definition of duties and requirements for candidates), appropriate training in equal opportunities for all those involved in recruitment and promotion procedures, and a “more sophisticated” evaluation of “merit and academic excellence” than mere seniority.

The first recognition of these problems at EU level came in 2003, with the Communication “Researchers in the European Research Area: one profession, multiple careers”²¹⁸ which proposed a series of practical initiatives in order to foster the dialogue among stakeholders about the scientific profession and the management of human resources in R&D. The definition of “researchers” was proposed, as well as “public recognition” of their role and careers in R&D. Gender differences in R&D careers were mentioned, and the Communication said that the “EU and Member States, as well as associated countries, are well aware that the under-representation of women in R&D must be tackled if optimal use is to be made of human resources devoted to research”. “Recruiting, retaining, and

promoting women in research require innovative practices in terms of performance evaluation and rewarding systems. In order to be attractive to women researchers, careers in R&D should cease to appear as being in conflict with having a family, a conflict that continues to apply almost exclusively to women. Similarly, women need to be recognised for their achievements and not be put under excessive pressure to outperform male colleagues”. The Communication dealt with research training, recruitment methods, employment and working conditions, remuneration, career evaluation systems, etc. The Commission proposed action and initiatives to be implemented in all these areas, and underlined that it intended “to develop all these actions in seeking equal benefit for men and women researchers by paying attention to the different impact they may have on men’s and women’s lives.”

The first step towards encouraging the modernisation of university management was taken by DG Research with the publication of the “European Charter for Researchers and Code of Conduct for the recruitment of researchers”²¹⁹. The Commission recommends to the Member States to undertake the necessary steps to: ensure that employers develop and maintain

218 COM (2003)436 – July 2003

219 Commission Recommendation on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers- COM(2005)576 – 11 March 2005

a supportive research environment and working culture, where individuals and research groups are valued, encouraged and supported; ensure that employers improve the recruitment methods and career evaluation/appraisal systems in order to create a more transparent, open, equal and internationally accepted system of recruitment and career development; ensure that researchers enjoy adequate social security coverage.

The Commission Staff working document, published in April 2005²²⁰ reemphasised the need to implement human resources development strategies able to provide a working environment, which would allow women and men scientists to combine family and work, private and professional life. To this end, it proposed that good practices be developed, which also mobilised men to share family responsibilities; research institutions and programmes be stimulated to develop standards to ensure a healthy work-life balance (WLB) in research; publicly funded programs should include information on WLB; maternity and parental leave should be addressed within all mobility programmes, and men should be encouraged to take parental leave; age limitation – which de facto constituted a disadvantage for the career of women with children – should be

²²⁰ European Commission, "Women and Science – Excellence and innovation – Gender Equality in Science" – SEC(2005)370 – April 2005

abolished; dual career issues should be addressed at European, national and institutional level. It also recommended the increase of transparency of the screening and selection procedure, to improve scientific excellence. Guidelines for scientific institutions should be developed and implemented (like the Charter and Code), including recommendations on the accountability of panel members, public advertising of positions, explicit standards of promotion or appointments and the use of appropriate indicators of performance.

In 2008, the Communication²²¹ on better careers and mobility for researchers, repeated the recommendations in the 2005 Code of Conduct, and most recently, the preparation of National Action Plans is being encouraged to implement a better partnership with Member States on researcher management, status and mobility.

Looking at the private sector, the 2006 WIST Report ²²² showed that process management is an important factor affecting the slow progress towards gender diversity in research and technology. Companies are at

²²¹ COM(2008)317 final – Communication from the Commission to the Council and the European Parliament:
Better Careers and More Mobility: A European Partnership For Researchers

²²² European Commission, "Women in Science and Technology: the Business Perspective" – 2006, Luxembourg: Office for Official Publications of the European Communities



different stages of awareness and of management commitment to sustainable and significant change. Some started as early as the 1970s to develop diversity-oriented policies – usually as a response to ethnicity and racial issues, some have started only recently with a growing awareness of the importance of a gender-diverse workforce. Those who started earlier confirmed that complex cultural changes – required to have gender diversity recognised and accepted as growth factor – can only take place if top-level management is not only committed, but also active in taking the lead. Analysis showed that in order to make diversity productive, major investments must be made in management quality, by focusing on similarities and differences. Differences have to be acknowledged, respected and communicated, in order to make them productive.

DG Research is looking at transferring these principles to public research management. In 2007, it initially funded under the 7th Framework Programme (FP7) a survey of positive actions taken to get women into top level positions in research, comparing EU and non-EU experiences (USA, Canada and Australia). The PRAGES project (see annex V) identified, classified and assessed international good practice, and collected these in a database. The project created indicators for the comparison and measurement of the most important data on

good practice, and also produced a set of guidelines for implementation.

In the 2008 FP7 call for proposals, there was a clear change of direction towards gender diversity management in research organisations. The request was to identify and analyse the strategies used, for instance, to implement the European Charter for Researchers and the Code of Conduct for Recruitment, and other similar commitments taken by public research organisations. The idea was to contribute to fostering change – in particular in terms of increasing the participation of women at the highest levels of research, as well as in the methods used for recruitment and retention of research personnel, both men and women. Two projects were selected for funding: WHIST and Diversity (see annex V).

In 2008, the European Commission published the report “Mapping the Maze: Getting More Women to the Top in Research”²²³, which analysed the situation of women in research decision making positions in a number of Member States. The analysis revealed that the situation is far from balanced, and that more should be done – by the Member States – to reach equality.

²²³ European Commission, “Mapping the Maze: Getting more women to the top in research” – 2008, Luxembourg: Office for Official Publications of the European Communities

In the 2009 Science in Society work programme for FP7, the request was to identify, discuss and implement best practices on gender balance in research and higher education institutions. Actions were to involve top decision-makers (rectors' associations, ministries, networks of research associations, etc). The outcome would be their commitment to advance the current situation on gender balance in

research positions. Two projects were selected for funding: GenSET and GENDERA (see annex V). The next step will go further towards funding "structural change" in research institution management. The 2010 work programme calls for research organisations and universities to develop and implement tailored multi-annual action plans, where steps towards real change in gender management are defined.

In order to raise awareness on the need for gender-aware human resource management in research institutions, the Commission organised a conference in 2009:

Changing research landscapes to make the most of human potential: 10 years of EU activities in Women and Science, and BEYOND Prague 14-15 May 2009

Ten years of EU experience in analysing the situation regarding the field of women in science has demonstrated that the direct commitment of universities and other research institutions is essential.

The conference was organised in Prague on 14-15 May 2009 in cooperation with the Czech Presidency of the European Union. It offered the opportunity to highlight best practices, adopted in EU and third country institutions, in attracting and keeping women, and men, in science and technology careers. During the conference, such methods were discussed, and a number of gender awareness measures to modernise human resources management in research institutions were identified.

The modernisation of universities and research institutions is generally focused on critical issues such as autonomy, funding, accountability, partnership with businesses, quality of research, intellectual property rights, open access to research results, contribution to innovation, community engagement, etc. Human resources management, however, is often not included as one of the main issues – and gender issues are very rarely considered.



Nevertheless, no true modernisation of universities and research institutions can take place if the social relationships governing them remain based on and ruled by stereotypes – i.e. if excellence is biased or if innovativeness is not promoted through “diverse thinking”. Gender bias is often the source of the more ingrained stereotypes: tackling it in the management of universities and research institutions could provide the basis for radical change in other fields.

In addition, because the majority of gender based stereotypes are already acquired at school, the conference also included discussions on possible measures at school level, including the identification and elimination of old-fashioned regulations, teaching methods and teaching materials.

Conference Conclusions

The aim of the conference was to share best practice in attracting and keeping women – and men – in science and technology careers, taking into account what has been learnt from ten years of EU activities in the field of women and science. This experience has confirmed the understanding that – without gender-aware commitment by the human resources management in universities and other research institutions – the solution to the shortage of highly skilled people in the European Research Area (ERA) will not be found. On the contrary, problems with attracting and keeping researchers will continue to increase.

The conference concluded the following:

1. Importance of top-level support for change

Without top-level political and administrative support, there is little prospect for making lasting gender-aware changes. The conference, therefore, concluded that Member States should make a greater effort to mainstream gender in all their policies, especially in research – taking into account the important impact of national policies on the participation of women in research and innovation professions. In particular, Member States should explicitly include – both at national and institutional levels – the gender equality dimension in their National Action Plans that need to be prepared as part of the “European Partnership for Researchers for mobility and career development” in order to enhance the overall governance of the ERA (the “Ljubljana Process”). Other stakeholders at European, national and local level should support this effort.

2. Structural change is possible

The on-going modernisation process in universities and research institutions cannot ignore the human resources aspect, and the need for gender-aware policies in administration and management. Experience in diversity management in the private sector has shown that change is possible and also that it has human resource benefits.

3. Crisis provides opportunities for change

Difficult decisions can often be made more easily when there is a general perception of crisis. Since making gender-aware changes can be controversial, the current global economic crisis provides an opportunity for national governments and research institutions to make decisions that can also bring about the needed societal change. Innovation is needed to meet today's challenges, and new ideas flourish in diversity. Since the two sexes are the fundamental source of diversity in society, the conference concluded that a balanced participation of women and men will contribute towards innovation and solution-finding.

4. Women and men – and institutions – benefit from a balanced working life

Case studies from industry demonstrate that work-life balance is not only good for women, and for men, but also for the companies themselves. Universities and public research institutions could learn from the experiences of the private sector and make themselves better places to work.

5. School science education has an important role

Because many of the gender-based stereotypes in research are introduced early during the school years, it is important to have measures that help identify and address such stereotypes in teaching methods and materials, and encourage teachers to use these measures. Science teaching needs to be improved to not only encourage more young people to choose careers in science and technology, but also simply to train science and gender-aware citizens for the future in our knowledge-based society.



Chapter 4

Mainstreaming gender in
EU policy
(particularly in research)

Chapter 4 Mainstreaming gender in EU policy (particularly in research)

This chapter deals with the theme of the mainstreaming gender in EU policy, particularly in research. (*Mainstreaming gender means taking account of the gender dimension in all relevant aspects of policy.*) This covers the third and final group of policy objectives deriving from the recommendations made to the Commission in the field of women in science. The chapter is divided into three sections, describing: 1) what the European Commission has done to mainstream gender

in its own structures; 2) what the Member States have done to mainstream gender in their national activities and legislation, and 3) what the EU has done to help the Member States to mainstream gender: a) Work-life Balance legislation, b) mainstreaming gender in research through the Framework Programme; c) mainstreaming gender in the Framework Programme's Science and/in Society field.

4.1 What the European Commission has done: creating structures within the Commission to mainstream gender

Commissioner Cresson ensured the creation of a “Women and Science” sector within the Directorate General for Research (then DG XII), which was originally composed of 5 people working full time on the subject. The sector was upgraded to a unit in 2001, under Commissioner Busquin, with a staff of up to 12. The unit was later – at the end of 2006 – merged with other sectors to create the Unit for “Scientific Culture and Gender Issues”. By the end of 2009, the staff in this Unit numbered 23, but none were dealing exclusively with gender issues.

In 2001, at the same time that the sector W&S was created, a DG Research Inter-service working group was set up, originally called the “Gender Watch System”, whose objective was to monitor the progress of gender mainstreaming in all research programmes and fields. This Group is composed of representatives of all Directorates in DG Research, as well as representatives from the other DGs belonging to the so-called “research family”: DG Enterprise, DG Information Society, and DG Transport.

With a larger scope, another Inter-service Group was created by DG Employment to monitor gender mainstreaming in all policies of the European Commission: the “Inter-service group on equality between women and men”.

While the changes during the short lifespan of the “women and science” subject in DG Research reveal the “up-and-down” of its political momentum, the efficiency of the “gender watch” group has always depended on its members and the gender-awareness



of the members' management. Usually the members appointed to the Group see the gender mainstreaming task as something in addition to their normal workload, leaving them very little time to deal with the topic. These members are sometimes aware of gender issues in research but more generally have to learn while working in the Group, requiring some time of "instruction" before becoming operational. Finally, and to complicate the process, the frequent turnover in the Commission's workforce requires that this process is repeated quite often during the year.

Gender-awareness training is something that has been recommended since the very beginning of women and science activities, and it has finally been provided via a training "toolkit". The training sessions started in late 2009, and the demand for them is encouraging, but progress is very slow.

The European Institute for Gender Equality that has been foreseen since 2006 has yet to become fully operational. Its competencies, and potential cooperation with the research field, are yet to be defined.

At the opening of the Commission-Parliament joint conference "Women and Science"²²⁴ in April 1998, Commissioner Edith Cresson announced the creation of a sector within an existing unit to deal specifically with "women and science" issues. One of the speakers at this conference supported this announcement by saying that "DG XII will unquestionably need a unit to set targets and monitor"²²⁵ their implementation, but also to promote "a new research culture". The 1999 Communication²²⁶ confirmed that "a "women and science" coordinating

structure has been set up within the Commission, comprising two elements: a sector, a small and flexible administrative body dedicated to coordinating and providing the impetus for the "gender and science watch system"; a working group, made up of staff from the relevant Commission departments, whose role will be to implement the "gender and science watch system" within the specific programmes and the Framework Programme in general." The sector was formally created on 1 January 1999, as part of the Directorate "Human Potential" in DG XII (Research). The sector became a Unit in 2001.

The European Parliament went further. In its report on the 1999 Communication²²⁷, the

224 European Commission, "Women and science: Proceedings of the conference, Brussels, 28-29 April 1998", 1999, Luxembourg: Office for Official Publications of the European Communities

225 *Ibid.*, p35

226 Communication "Women in science: Mobilising women to enrich European research" – COM99/76 – February 1999

227 PE 231.841/DEF, A5-0082/1999

rapporteur of the Committee on Women's Rights and Equal Opportunities, the MEP Eryl Margaret McNally, wrote that the Parliament "calls on all DGs in the Commission to consider setting up a properly resourced group similar to the Women and Science sector in DG Research, with responsibility for monitoring the effectiveness of mainstreaming in the work of the DG, and for addressing the under-representation of women". This call was partially answered with the tasking of the already existing "Inter-Service Group on Equality between Women and Men", created in 1996 by DG Employment with the monitoring of the mainstreaming of gender issues in all aspects of European policy.

In October 1999 the European Technology Assessment Network (ETAN) working group on Women and Science delivered its report: "Science Policies in the European Union: Promoting excellence through mainstreaming gender equality"²²⁸. It proposed ensuring adequate expertise, on mainstreaming gender equality into the Framework Programmes, through equality training for Commission staff and for expert and monitoring panel members; through hiring "flying experts", providing resources to the Women & Science sector to develop

expertise, and supporting the proposed European Gender Institute.

As gender mainstreaming of the Framework Programme could not happen in isolation and needed the cooperation of all the Commission services involved in the research programme, a "Women and Science Inter-service Working Group" was created in 2000 (in response to the call in 1999 for a gender watch system). It brought together representatives of the various directorates of DG RTD and other DGs (incl. Enterprise, Information Society, Transport and Energy, Euratom). The first meeting of the W&S working group took place in May 2001 and since then the group has met in over twenty meetings.

Each Directorate-General, however, has promoted its own activities related to gender issues. DG Information Society, for instance, has worked to raise awareness regarding the problem of lack of interest among young people, especially girls, in Information and Communication Technology (ICT) careers – an important issue considering that ICT is a key contributor to EU growth. The DG funded a study to identify best practices in private and public organizations in the EU (25 Member States when the study was launched), entitled "Best practices for Even Gender Distribution in the 25 MS in the domain of Information Society

²²⁸ European Commission, "Science Policies in the European Union: Promoting excellence through mainstreaming gender equality", 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities



Technologies”²²⁹. The objective of this study was to foster the participation of women in the ICT domain and to provide relevant input for further European policy developments and their implementation in the area. This was done by identifying, selecting and analysing different best practice cases in major public and private European ICT organisations.

In 2001 the function of the Women and Science Inter-service Working Group (W&S Group) was seen as twofold: to help bring to fruition the measures laid out in the communication of February 1999, “Mobilising women to enrich European research”²³⁰; and to contribute towards the creation of women and science activities for the European Research Area and the 6th Framework Programme. In 2006 the working group requested a mandate, which would clarify in detail its role and provide it with a stronger voice on W&S issues in the respective directorates and DGs. Up to then, the group’s work had been carried out on a goodwill basis with the cooperation of the directors, but with the approach of the 7th Framework Programme, the group wanted to play a stronger and more contributory role in the practical implementation of gender mainstreaming in FP7 (e.g. work

programmes, call texts, negotiation guidelines, model contracts, evaluations). The resulting mandate stated that the W&S working group had the following tasks: continue cross-Directorate/DG cooperation on Women and Science issues (through regular meetings with the Women and Science Unit); provide input to the practical implementation of gender mainstreaming in the research Framework Programmes (such as contributing to the working groups on evaluation and negotiation, advising on the work programmes, call texts, negotiations and evaluations); support existing gender mainstreaming activities in place to promote women in science; and support scientific officers on women and science issues. The W&S Group contributed to the production of the two analyses of gender mainstreaming in EU research: the “Gender Impact Assessment of the specific programmes of the 5th Framework Programme”²³¹ and “Monitoring progress toward gender equality in the 6th Framework Programme” (Gender Monitoring Studies)²³². (See Section 4.3 b) for more detail).

In addition to DG Research’s own gender-related activities, there is also cooperation

229 Available on: http://ec.europa.eu/information_society/activities/itgirls/doc/best_practices.pdf

230 Communication “Women in science: Mobilising women to enrich European research” – COM99/76 – February 1999

231 European Commission “Gender in Research – Gender Impact Assessment of the specific programmes of the Fifth Framework Programme”, 2001, Luxembourg: Office for Official Publications of the European Communities

232 European Commission “Monitoring Progress Towards Gender Equality in the 6th Framework Programme”, 2009, Luxembourg: Office for Official Publications of the European Communities

with other Commission bodies dealing with gender issues. DG Research is represented by its “women and science” unit in the above-mentioned “Inter-Service Group on Equality between Women and Men”, chaired by DG Employment, which coordinates gender equality issues for the Commission and is responsible for the “Roadmap for equality between women and men (2006-2010)²³³” (adopted in March 2006). The Roadmap sets out the commitments taken by the Commission regarding gender equality for the period 2006-2010. A mid-term monitoring report was published²³⁴ in 2008, reviewing the progress made over the previous years and the activities put in place by all DGs in the Commission. The Inter-Service Group exchanges information and best internal practices regarding equal opportunity activities and legislation, and is the central engine for the Roadmap implementation and assessment. The next phase of the Roadmap will be launched in 2010 for another 5-year period.

In 2009, the European Commission’s Joint Research Centre (JRC) signed a memorandum of understanding with the American Association for the Advancement of Science (AAAS) that spells out a range of potential ideas for future joint efforts, including helping to build opportunities for women in science and technology.

The other potential partner for DG Research’s gender activities is a relatively new Commission body that was created in 2006 as the European Institute for Gender Equality²³⁵: a European agency to support the Member States and the European institutions (in particular the Commission) in their efforts to promote gender equality, to fight discrimination based on sex and to raise awareness of gender issues. The tasks of the institute are to collect and analyse comparable data on gender issues, to develop methodological tools, in particular for the integration of the gender dimension in all policy areas, to facilitate the exchange of best practices and dialogue among stakeholders, and to raise awareness among EU citizens. The Institute is temporarily based in Brussels before moving to its seat in Vilnius, Lithuania.

233 COM(2006)92 final
234 COM/2008/0760 final

235 Regulation (EC) No 1922/2006 of the European Parliament and of the Council of 20 December 2006 on establishing a European Institute for Gender Equality – OJ L 403, 30.12.2006, p. 9–17. (EIGE’s budget for 2007-2013 is 52.5 million €)



4.2 What the Member States have done nationally to mainstream gender

Member States have a large variety of legislation, policies, and measures on women in science that were initially mapped in the report by the Helsinki Group in 2001 and then updated in 2008. Several other reports have examined the national situations according to different aspects, such as research funding, pay gap, decision making, etc. Member States share their national best practice within the framework of the Helsinki Group. In 2005 the European Council adopted the 25% target for women in top positions in public research, but removed the deadline proposed by the European Commission, thereby weakening the potential policy impact.

Since the 1990s there had been a growing awareness in the Member States of the fact that women are under-represented in the scientific community and that something should be done. A number of different national policies had been introduced, and the 1999 Communication “Women and science: Mobilising women to enrich European research”²³⁶ provided an overview, saying that some “positive action and quantitative objectives had been established” in Germany, Denmark, Sweden, Finland, etc. Other countries had been promoting women at university and throughout the educational system, such as the Netherlands and Italy, while France, Ireland and Luxembourg had been taking measures to encourage girls to choose scientific careers. Some countries already had administrative structures to support women in science, others were

creating them, like the UK and Germany. In most Member States, women’s studies and gender research had been growing in importance.

The ETAN report²³⁷ mentioned a number of special measures introduced in some MS to address the disadvantages experienced by women in science careers, but described them as insufficient, when not ineffective. The report recommended that the Member States promote more specific actions for women in science, including equal treatment legislation, positive actions and mainstreaming measures. The priorities were seen to be: open and transparent recruitment systems; good quality training on equality for human resources personnel involved in recruitment; mixed-sex appointment panels;

²³⁶ Communication “Women in science: Mobilising women to enrich European research” – COM99/76 – February 1999

²³⁷ European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

a closed or at least reduced pay gap; and monitoring the progress made at national level toward a balanced representation of women in science.

The 2000 conference “Women and Science: Making change happen” also presented a number of national best practices, but the first complete policy review was made by the members of the Helsinki Group on Women and Science (See Section 2.3) who examined the position of women in science in their respective countries and identified the policy approaches.

The resulting report “National Policies on Women and Science in Europe²³⁸”, compiled by Prof. Teresa Rees, offered an overview of the situation in the various countries and underlined the importance of developing a strategic collective capacity to promote the “women and science” issue across the research policy process at national and EU level. The report concluded that there was considerable diversity among the countries in terms of scientific infrastructure, equality measures and the climate for women seeking to pursue scientific careers. Common factors included a lack of gender balance in decision making about science policy and among those who determine what constitutes “good” science.

238 European Commission, The Helsinki Group on Women and Science “National Policies on Women in Science in Europe” – 2002, Luxembourg: Office for Official Publications of the European Communities

The report stated that the motivating effects of the Helsinki Group's policy forum were starting to appear: several national steering committees for women and science had been established to focus attention on the issue. Examples of policies existing at national level included positive action measures, such as supporting networks, promoting role models, and mentoring schemes, and in some cases setting targets and quotas. Some countries had experimented with earmarking posts, and/or research funding for women scientists. Gender mainstreaming tools were also used, including legislation. A few countries had legislation to ensure gender balance on public bodies such as funding councils. Some also insisted upon a gender balance on university and research institutes' academic and scientific committees. Many countries reported support for Gender Studies to enhance understanding of the gendering of science and scientific excellence, and engendering or modernising human resource management in research. This was being developed through transparency in recruitment and promotion processes, awareness raising and equality training, and the use of gender mainstreaming experts to advise on gender-proofing policies and practice. A few countries identified gender-proofing of the pedagogy of science education as an approach being used to identify and eliminate biases in how science is taught. Measures reported to facilitate a reasonable work/life balance included good



employment practices, and programmes targeted at women returners to accommodate their re-entry to scientific careers after a period at home with childcare responsibilities.

In the report, some members of the Helsinki Group acknowledged that by working together and exchanging experiences, they had been able to move faster on this issue than they might have done working in isolation. Future priorities and perspectives therefore included firstly, facilitating future collaborative working to sustain mutual learning and progress. A second task entailed ensuring more support for Gender Studies research to better understand the gendering of science and scientific careers. A third task focused on the development and use of a series of tools to evaluate and monitor positive action and gender mainstreaming measures designed to promote gender equality in science and scientific careers.

The report also considered the Eastern and Central European countries and the Baltic States, which due to their political history tended to be in a different situation regarding the women and science issue. Many were in the process of building or reforming their research systems, and had problems with funding and infrastructure. Most research, both basic and applied, was undertaken within the public sector, and the equal opportunities agenda was not among their

priorities. The call in the report for more detailed information on these countries led to the 2001 Action Plan for Science and Society including an analysis of the situation of women in science in the (then) candidate countries of Central and Eastern Europe and the Baltic States. The European Commission, therefore, created an expert group, the so-called ENWISE group (“Enlarging Women in Science to East”) that produced national reports as a basis for a comparative analysis, resulting in a final report titled “Waste of talents: turning private struggles into a public issue. Women and Science in the ENWISE countries”²³⁹.

As far as legislation was concerned, the National Policies report found that all but three of the Helsinki Group countries had some form of equal treatment legislation in place. All but one of the Member States and eight of the associated countries had statutory equality agencies. Some countries had included equal opportunity issues in the legislation regulating higher education, including the financing of universities. Some northern and southern Member States reported on the existence of legislation to ensure a gender balance in bodies such as senior university and research institute committees, Research Councils and

239 European Commission, “Waste of talents: turning private struggles into a public issue – Women and Science in the Enwise countries” – 2003, Luxembourg: Office for Official Publications of the European Communities

appointment panels (e.g. with a 30-40% ratio). The report concluded that: “such a gender balance as a legal requirement can change the culture and modus operandi of committees. It gives more women experience of committee work and access to the insights and networks that it can offer. It also gives more men experience of working with women on committees and an opportunity to appreciate their skills and contribution first hand.”

In 2005, the “Excellence and Innovation: Gender Equality in Science” working staff document²⁴⁰ found that some progress had been made at the national level. Gender equality policies had become an important issue in all EU Member States, and a table of these equality measures (See Table 1) showed the existence of legislation, positive actions, targets, etc. In order to mainstream gender equality in science, several countries had established structures such as national committees, or units dedicated to women in science in relevant government departments. Others had established national resource and coordination centres for women in science activities.

This Commission document also identified future priorities, which included increasing the proportion of women in leading positions

in science, engineering and technology (a target was proposed: 25% by 2010); increasing the proportion of women in industrial research (a target of one-third was proposed, as was the case in the public sector, by 2010); improving work/life balance measures (men sharing family responsibilities); and encouraging research institutions to ensure a healthy work/life balance in research. Member States were invited to increase their monitoring and data collection efforts. The subsequent Competitiveness Council²⁴¹ endorsed the above mentioned targets – also the 25% target for women in top positions – but removed the deadlines, thereby reducing the political impact of the targets.

In 2006, the WIRDEM expert group was set up to examine the situation of women in research decision making at the national level. This included the analysis of policies and activities to promote gender equality in research decision making in 15 European countries. Among the final recommendations in the report “Mapping the Maze: Getting more women to the top in research”²⁴², there was the call to national authorities to make sure that the high level commitments to equality, which already exist in the national legislation, are known in the scientific

240 European Commission “Women and Science – Excellence and Innovation – Gender Equality in Science” – 2005, SEC(2005)370

241 Council conclusions “Reinforcing human resources in science and technology in the ERA”, 18/4/2005

242 European Commission, “Mapping the Maze: Getting more women to the top in research” – 2008, Luxembourg: Office for Official Publications of the European Communities



Table 1: Equality Measures in EU member States, 2004

Equality Measures in Science	EU-Member States (25)									
	BE	CY	CZ	DK	DE	EE	EL	ES	FR	IE
Equal treatment legislation (general)	X		X	X	X	X	X	X	X	X
Commitment to gender mainstreaming	X	X	X	X	X		X	X	X	X
National Committee on Women & Science	X	X	X	xx	X	X	xx	X	X	X
Women & Science Unit in Research Ministry					X		X5		X	
Publication of Sex-disaggregated Statistics	X	X	X	X	X	X	X	X	X	X
Development of Gender equality indicators	X4			X	X		X		X	X
Gender balance targets: public committees	X2			X	X		X		X	X
Gender balance targets on university ctees		X		X	X				X	
Gender Equality Plans in Univ. & Research I.	X4			X	X				X	X
Gender ² Studies & Research at Universities	X	X	X	X	X	X	X	X	X	X
Programmes on W&S, special funding available					X		X		X	xx
Nationwide Centres on Women & Science			X		X					

***Source:** Information provided by the members of the Helsinki group & EOWIN, Summer 2004, DG RTD, UNIT C4

xx = in preparation

X1 = only BE French-speaking

X2 = only BE Flemish-speaking

X3 = not for industrial R&D

X4 = set by certain universities

X5 = person only responsible for W&S

X = yes blanc cell = no

² or women studies/research

IT	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X		X	X			X	X	X	X	X		X	X	X
X		X		X	X		X	X	X	X	X	X	X	
X							X							X
	X	X	xx	X	X	X	X		X	X	X	X	X	X3
X	X			X	X		X		X	X		X	X	X
												X	X	X
						X4	X					X	X	X4
X			xx			X4	X					X	X	
X	X	X	xx	X	X	X	X		X	X	X	X	X	X
X	xx	xx			X	X	X			X				X
														X



community and that they are implemented. And the situation in some of the Central European countries was updated in 2008 with the results of a project, funded under the 6th Framework Programme, called WS-DEBATE. The final report “Re-Claiming a political voice: women and science in Central Europe”²⁴³ recognised the catalysing effect of the EU on the issue of women in science in the five analysed Member States, where the situation was slowly improving, despite the insufficient reaction of the national policy makers. The pressure exerted by the EU in the field of gender equality was seen as having been crucial in this improvement.

An updated overview of national policies in the 27 Member States, 5 Associated Countries and 5 Balkan countries was also published in 2008 as “Benchmarking policy measures for gender equality in science”²⁴⁴. The report shows that much progress has been achieved since 2002: all the studied countries now have equal treatment legislation, and only three countries (Former Yugoslav Republic of Macedonia, Israel and Switzerland) do not have a ministry with responsibility for women’s issues or a

statutory sex equality agency. Five more countries (Denmark, Estonia, France, Latvia and Spain) have declared their commitment to gender mainstreaming since 2002, leaving 12 countries out of 38 with no plans for mainstreaming. All but two countries (Former Yugoslav Republic of Macedonia and Montenegro) offer women’s or gender studies courses within their universities. Sex-disaggregated statistics are becoming more widely available, with only three countries not reporting such data (Luxembourg, Bosnia and Herzegovina, and Montenegro).

According to the report, statistical analysis shows that the presence of certain equality measures is linked with the rates of participation of women in science. Contrary to many expectations, the proportion of women researchers is negatively correlated with the presence of measures such as the existence of a unit for women in science at the Ministry of Science (or equivalent), targets/quotas, mentoring schemes, special funding for women in science and paternity leave. Countries where the proportion of women researchers is high tend to be low-innovating countries where there is a small business enterprise sector (i.e. most research is carried out in the government and higher education sectors). Since the proportion of women researchers in the private sector is much lower than in the public sector, the bigger the private sector in research, the lower the proportion of women. Yet it is the high-innovating countries with more research

243 Linkova M. et al. “Re-Claiming a political voice: women and science in Central Europe” – Institute of sociology of the Academy of Science of Czech Republic, Prague 2008

244 European Commission, “Benchmarking policy measures for gender equality in science” – 2008, Luxembourg: Office for Official Publications of the European Commission

taking place in the private sector that have implemented equality measures. This results in the unusual combination of high-innovating country plus equality measures plus low proportion of female researchers.

However, the presence of several of these same measures (a unit for women within the Ministry of Science or equivalent, targets, special funding for women in science and paternity leave) is *positively* correlated with the proportion of women in professorial grades. Moreover, these measures are often implemented in pairs, where “targets” and “equality plans” are usually either present or absent together in a country. A similar grouping can be observed for “women and science units” and “funding for women in science”, while mentoring schemes are usually found in countries with “university equality plans”. Finally, countries that have implemented mentoring schemes also often tend to have introduced funding for women in science. Thus it is constructive to consider introducing packages or “rafts” of closely related measures to ensure more impact. One explanation for the correlation between the grouped presence of certain measures and the higher proportion of women professors is that these measures are more likely to be implemented in countries where there is already a growing body of opinion favouring support for women in science.

The role of Member States and their policies in promoting equality in research has most

recently been underlined in the Communication “Better careers and more mobility: a European partnership for researchers”²⁴⁵. It encourages improvements in the national systems and institutions, such as systematically open recruitment; meeting the social security and supplementary pension needs of mobile researchers; providing attractive employment and working conditions; and enhancing the training, skills and experience of researchers. The Communication considers such steps necessary for the creation of a world class European research system: coordinated action in these areas, alongside renewed efforts on existing initiatives such as increasing the take-up of the principles of the Charter and Code²⁴⁶, would provide better job opportunities and more rewarding careers for all researchers. The Partnership would be implemented through actions plans at the national level, which also need to take gender issues into account.

4.3 What the EU has done to help the Member States to mainstream gender

Among the areas where EU legislation has influenced national legislation and national

²⁴⁵ COM(2008)317 of May 2008

²⁴⁶ Commission Recommendation of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers [2005/251/EC] – COM(2005)576



activities in research (including women in science) are:

a) Work-life Balance legislation,

b) mainstreaming gender in research through the Framework Programme;

c) mainstreaming gender in the Framework Programme's Science and/in Society fields.

a) EU legislation on Work-Life Balance

Reconciling private and professional lives is a problem for women but it affects men as well: it is about balancing family and career. The situation is changing because new generations of men and women are prepared to modify traditional social habits. There is a call for change, but change cannot be brought about only through imposed legislation. It is a cultural change that is needed – a change in how the working environment and family life is organised.

Working conditions and gender

The “Roadmap for equality between women and men (2006-2010)”²⁴⁷, in its 2009-2010 Work Programme, quotes the latest analysis of the trends in the improvement of the integration of women in the labour market. These showed that the female employment rate (58.3% in 2008) is now close to the Lisbon target (60% by 2010). However, as stated in the Joint Employment Report²⁴⁸, “most countries are still far from adopting a full gender-mainstreaming approach to employment policies, notably through systematic gender impact assessment of policy measures”. Despite the fact that

gender had a limited profile in the recommendations that were proposed by the Commission and adopted by the Council²⁴⁹, the Commission has underlined²⁵⁰ a number of challenges linked to female employment or to reconciling work, private and family life. This is particularly valid in the scientific working environment, with its inflexible working time patterns.

247 COM(2006)0092 of 01/3/2006

248 Document of the Council of the EU 7435/09

249 Document of Council of the EU 6457/09 <http://register.consilium.europa.eu/pdf/en/09/st06/st06457.en09.pdf>

250 Implementation of the Lisbon Strategy Structural Reforms in the context of the European Economic Recovery Plan: Annual country assessments – a detailed overview of progress made with the implementation of the Lisbon Strategy reforms in Member States in 2008: http://ec.europa.eu/growthandjobs/pdf/european-dimension-200812-annual-progress-report/annualass_detail.pdf

The equal opportunity policy of the EU goes back as far as the Treaty of Rome. Article 119 of the Treaty provided for equal pay for equal work for women and men. But the policy did not really take off before the 1970s. In 1974, a Social Charter was first adopted, and from then on, the European Community/ European Union started developing legislation in the field of social policy in general and in equal opportunities in particular.

Recently the Commission published a list of the thirteen key directives on gender equality adopted by the Union since the 1970s, using the legal basis provided by the Treaties.

These have also ensured equal treatment concerning access to work, training, promotions and working conditions, including equal pay and social security benefits, as well as guaranteed rights to parental leave.

Key EU legislation (working conditions and gender)

Equal Pay Directive – 1975: Provides that sex discrimination in respect of all aspects of pay should be eliminated.

Equal Treatment Directive – 1976: Provides that there should be no sex discrimination, either direct or indirect, nor by reference to marital or family status, in access to employment, training, working conditions, promotion or dismissal.

Social Security Directive – 1979: Requires equal treatment between women and men in statutory schemes for protection against sickness, invalidity, old age, accidents at work and occupational diseases and unemployment.

Occupational Social Security Directive – 1986: Aimed to implement equal treatment between women and men in occupational social security schemes. Amended in 1996.

Self-employment Directive – 1986: Applies principle of equal treatment between women and men to self-employed workers, including in agriculture and provides protection for self-employed women during pregnancy and motherhood.

Pregnant Workers Directive – 1992: Requires minimum measures to improve safety and health at work of pregnant women and women who have recently given birth or are breast-feeding, including a statutory right to maternity leave of at least 14 weeks.



Parental Leave Directive – 1996: Provides for all parents of children up to a given age defined by Member States, to be given at least 3 months' parental leave and for individuals to take time off when a dependent is ill or injured.

Burden of Proof in cases of discrimination based on sex Directive – 1997: Required changes in Member States' judicial systems so that the burden of proof is shared more fairly in cases where workers made complaints of sex discrimination against their employers.

Equal Treatment in Employment Directive – 2002: Substantially amends the 1976 Equal Treatment Directive adding definitions of indirect discrimination, harassment and sexual harassment and requiring Member States to set up equality bodies to promote, analyse, monitor and support equal treatment between women and men.

Goods and Services Directive – 2004; Applies the principle of equal treatment between women and men to access to goods and services available to the public. Extends gender equality legislation outside the employment field for the first time.

Recast Directive Equal Treatment in Employment and Occupation – 2006: To enhance the transparency, clarity and coherence of the law, a directive was adopted in 2006 putting the existing provisions on equal pay, occupational schemes and "the burden of proof" into a single text.

Work-Life Balance in research

Special attention to the issue of equal opportunities in the field of science and technology in Europe started only in the 1990s. In 1993 during the international workshop on "Women in science"²⁵¹, one of the presentations examined the "barriers that have their roots in social patterns unfavourable for female researchers": the

years in which a scientist is to prove herself in the work fields coincides with the years in which she also establishes a family; maternity leave often disrupts the establishment of research careers, especially in a field where there is an increasing speed of developments; for women with young children it becomes increasingly difficult to be mobile, or to work long and irregular hours, a situation which clearly does not work in favour of their career prospects; in general the double burden of work and family, which many women still face, works against them. At the same conference, there was discussion about childcare facilities, family friendly policies by

251 European Commission, "Women in Science – International Workshop – 15th to 16th February 1993, Brussels – Proceedings", edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

employers, mentoring programmes, returner schemes, flexible fellowships, and replacement of chronological age by academic age for evaluation criteria. One of the presenters, Hilary Rose, asked “Does the institutional culture of science make possible to have a child and be researcher? Looking at the statistics, the answer is no. Women are choosing not to have babies. What we have to do is to build a research culture which supports the lives of “new” men, who want to share the responsibilities of their children ... We need to think in terms of how do we adapt the everyday culture to the kind of people we want to see doing science, that is, men who take their child care seriously, and women who have their children as well as having fun doing science”.

The 1999 ETAN report²⁵² dealt with this issue from three different angles. Firstly, research institutions were asked to treat “the employee as a whole person”. “For most men and women, treating the employee as a whole person principally entails taking their families and the rest of their lives into account in the organisation of work. Employees will have responsibilities for caring for children and, increasingly, elderly relatives. The reconciliation of work and family lives is

difficult but can be tackled through family friendly measures and flexibility. There are fewer surprises and emergencies and less stress. Career breaks can be regarded as natural, and returners of either sex should be encouraged to maintain contact. ... It means valuing personal development, lifelong learning and training activities (whether work related or not) and crucially, combating the “long hours culture”, “work addiction” and “presenteeism”.” Secondly, the report stated the need to promote “respect and dignity”. “This is about honouring staff and students as human beings and affording them respect and dignity. It implies operating a consistent and tough approach to discrimination and harassment (whether on the basis of sex or any other equality dimension), and bullying. There should be a high level of awareness in the work culture that such behaviour is unacceptable and perpetrators should be sanctioned, preferably by termination of contract. ... Finally, the importance of “participation and consultation” was noted. “For an integrated approach to gender equality, it is essential to foster a democratic culture of consultation and participation and to work towards a sharing of common goals. There should be a high awareness of employees’ and students’ views about barriers to equality. This means establishing mechanisms for listening and responding to views and suggestions such as equality officers and committees with budgets and power. There should be transparency of decision-making systems. An effective equal

252 European Commission, “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, A report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities



opportunities infrastructure and well-publicised grievance procedures are vital.” The report also drew attention to the indirect forms of sex discrimination that still exist, despite the anti-discrimination laws: the language used (implying that students or workers should be male); the long hours’ culture (which benefits those men who do not carry the major burden of household responsibilities); measuring productivity in terms of quantity rather than quality (which discriminates against women who take career breaks or are limited in the extra hours they can work by time-consuming domestic responsibilities). “There are many ways in which work culture and organisation is based on a notion of a bread-winner male and a home-maker female, even though relatively few (and a declining number of) families live in this way.”

In its 2000 Communication “Towards a European Research Area”²⁵³, the Commission called for a better organisation of research in Europe. To reach the goal of “more abundant and more mobile human resources”, it stated the need to give “more prominence to the place and role of women in research”. Although women accounted already for 50% of university graduates and even exceeded the number of men in some subjects (life sciences, for example), they were not found in the same proportions in the laboratories and research departments of companies. It

was recognised that there were “several factors behind this situation, in particular certain discrimination mechanisms and anticipation of them by women and little attention paid to particular constraints facing women in the conduct of their professional lives. This is a loss for women themselves, for research and for society”. Although this Communication referred to the 1999 Communication on “Women and science”²⁵⁴ as a starting point for actions in the field, the latter Communication makes no reference to working conditions for women scientists, except as a subject for research (“the situation of women on the labour market and in terms of social exclusion and integration”).

The 2000 ERA communication²⁵⁵ and the 2000 Lisbon objectives²⁵⁶ fed into the 2001 Communication “A Mobility Strategy for the ERA”²⁵⁷, whose principal aim was to “present a strategy to create a favourable environment for the mobility of researchers in the ERA, in order to develop, attract and retain human resources in research and to promote innovation”. The European Council in its 2001 Resolution on “Women and Science”²⁵⁸ invited the Commission “to promote gender

253 COM(2000)6 18/01/2000

254 COM (99)76

255 COM (2000)6 – 18/01/2000

256 Europe the most dynamic and competitive knowledge economy in the world by 2010 (Lisbon Council Conclusions, 23- 24 March 2000

257 A Mobility Strategy for the European Research Area (Commission Communication June, 2001, COM(2001)331 final)

258 OJ 2001/C 199/01

equality in those areas dealing with human resources and mobility activities". These human resource aspects and their often inhibiting effect on women's careers were discussed during the 2001 "Gender and Research" conference²⁵⁹.

Similarly to the ETAN report, many of the 2002 Helsinki Group (see Section 2.3) national reports stated that human resource (HR) management strategies in many universities were out of date and relied too heavily on nepotism, patronage and exclusively male networks as recruitment pools. Thus, "modernisation" of HR management in academic and research institutions was recommended: ensuring transparency in appointment and promotion procedures (advertising all posts, with clear duties and skills requirements for candidates); ensuring that those involved in recruitment and promotion procedures receive appropriate training in equal opportunities; being more sophisticated in judging "merit" and "academic excellence" (the criterion of "seniority" was considered insufficient, as "it represents no more and no less a measure of the number of years of uninterrupted service"). The Helsinki Group report concluded: "These may seem simple and indeed non-contentious measures that already characterise HR procedures in many

walks of life. However, they are by no means standard procedures in many European universities and research institutes. As a consequence, given the gendering of networks and lack of women in senior positions, excellent women scientists can miss opportunities".

Throughout the Helsinki Group national reports, there are accounts of difficulties encountered by women scientists in their careers by the impact of an uneven domestic division of labour. Since women are more likely to take career breaks for child rearing than men are, they may, as a consequence, lose continuity of service. It was found that they are likely, in most countries, to find it difficult to resume a scientific career in a competitive labour market. Women may prefer to work part-time to balance home chores and work. They may want to work flexible hours. They may need childcare facilities. While all these factors may also apply to male scientists, who could also benefit from changes in work practices, the national reports made it clear that for the most part it is women whose careers are adversely affected by the need to try to balance work and family life. However, policies promoting a good professional / private life balance benefit men as well as women. Particular attention was drawn to the need for young scientists to gain some international experience by spending at least a few years working abroad. Relatively few sources of funding are available to provide

259 "Gender and Research: Conference Proceedings, Brussels, 8-9 November 2001", 2002 Luxembourg: Office for Official Publications of the European Communities



support for the children of such young scientists while they seek to gain international experience. There are significant differences among Helsinki Group countries (Member States and countries associated to the Framework Programme) in the infrastructure available to support working parents and also, in the measures in place to help those who have taken a career break to get back into research.

The Commission confirmed its intention to tackle the situation in its 2003 Communication “Researchers in the European Research Area: one profession, multiple careers”²⁶⁰, which provided detailed propositions to ensure the recruitment and retention of researchers in the ERA, including the first outline of a European Charter and Code. Referring to the problem of the reconciliation of professional /private life balance in scientific careers, it was also stated that: “Recruiting, retaining and promoting women in research require innovative practices in terms of performance evaluation and rewarding systems. In order to be attractive to women researchers, careers in R&D should cease to appear as being in conflict with having a family, a conflict that continues to apply almost exclusively to women. Similarly, women need to be recognised for their achievements and not be put under excessive pressure to outperform male colleagues ... Business enterprises and

research organisations should promote good practices, such as flexible working time, dual track careers, “girls’ days”, etc. ... Beyond specific measures, it is of utmost importance that “gender lenses” be applied in analysing research careers. This implies recognising and taking account of the different impacts that the structuring characteristics of careers in R&D have on male and female researchers. ... This is what mainstreaming calls for, and this is why the gender dimension has the potential to produce not only true gender equality, but also to open up new perspectives”²⁶¹.

As a consequence, the Commission declared its intention to improve and coordinate efforts in favour of the recognition of the researcher profession, as well as to establish a real European labour market based on the potential capacities of all participants, independently of their geographical location, the sector they are working in or their gender. The Commission proposed to the Member States and to the stakeholders of the research community to develop means to enable the research community to compare salaries, including social security benefits and taxes, between countries, between disciplines, between sectors and between male and female researchers. All these actions should be

260 COM(2003)436 – July 2003.

261 Third European Report on Science & Technology Indicators- EUR 20025 /2003, page 249, in particular section 2: “Are women more affected by the family double standard?”

developed in seeking equal benefit for men and women researchers by paying attention to the different impact they may have on men's and women's lives. In its 2003 Resolution (JO 2003/C 317/03), the Council invited the Member States "to promote suitable work organisation arrangements and new ways of reconciling work and family life for both women and men in order to combat low representation and retention rates of women in the ICT sector as well as in research and technological development".

In addition, the 2004 "Gender and Excellence in the Making" report²⁶² indicated that the academic career system was based on the traditional male model of labour market participation. A scientific career presupposes long working hours, creating a rather one-sided professional /private life balance for many researchers – especially those with family responsibilities – that both men and women find difficult. The ideal is essentially a male model of practice, with full-time devotion, emphasis on early achievements, and exclusive identification with science, with no other social obligations – resulting in a "male bonus" ("The problem is not so much that women encounter discrimination as such, but that people – men and women – who resemble those who are in powerful

positions and behave according to masculine traditions of full-time devotion and competition enjoy a bonus that allows them to be assessed as better scientists. The winner seems to take all.").

As a way of addressing these issues, the European Commission, together with the Member States and those associated with the research programmes, developed a "European Charter for Researchers and Code of Conduct for the Recruitment of Researchers"²⁶³, whose "ultimate political goal is to contribute to the development of an attractive, open and sustainable European labour market for researchers, where the framework conditions allow for recruiting and retaining high quality researchers in environments conducive to effective performance and productivity". The Charter and Code provide a set of general principles and requirements that specify the roles, responsibilities and entitlements of researchers, employers and funders with regard to research careers. These are built on the basis that enhanced career prospects provide: an incentive for individuals to remain within research careers and stay in Europe; a more content and motivated workforce that incurs economic benefits to employing organisations and to Europe more widely; and a positive public attitude towards the

262 European Commission, Gender and Excellence in the Making" – 2004, European Commission, Luxembourg: Office for Official Publications of the European Communities

263 Commission Recommendation of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers [2005/251/EC] – COM(2005)576



researcher profession, and therefore encourage more young people to embark on careers in research. The Commission's recommendations on the Charter and Code were formally adopted by the Council in April 2005.

In April 2005, the staff working document "Women and Science: Excellence and Innovation – Gender Equality in Science"²⁶⁴ was published. It saw the priorities as: the promotion of research careers, allowing for a reconciliation of professional and private life; the mobilisation of men to share family responsibilities; all publicly funded programmes to include information on combining work and home life; parental leave to be part of all mobility programmes, with male researchers encouraged to use it; abolition of age limitations, adequate treatment for dual career couples.

The following 2005 Competitiveness Council²⁶⁵ affirmed the priorities : researchers should be offered sustainable career prospects at all career stages, regardless of their contractual situation and of the chosen R&D career path, and researchers should be treated as professionals and play a full role in the institutions in which they work; scientific excellence can be improved by promoting gender awareness and fairness; evaluation

and selection procedures need to be transparent and free of gender bias; working conditions and cultures in academia as well as in industry need to evolve towards a more inclusive environment allowing women to fully develop their potential; emphasis should be given to eliminating any discrimination and disadvantages for women researchers, especially those linked to maternity; mobility is a key element for researchers' career development and quality of research, a source of renewal and new ideas for research organisations and for contributing to the realisation of the European Research Area. The Council invited the Member States to: implement the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers; encourage the further development of sex disaggregated data on the participation of women in research, including the collection of yearly recruitment statistics; continue contributing towards working conditions which allow both women and men researchers to combine family and work, children and career; appropriate provisions for parental leave should be put in place.

In March 2006 the Commission published its Communication entitled "A Roadmap for equality between women and men – 2006-2010"²⁶⁶. It outlined six priority areas for EU action on gender equality for the period 2006-2010: equal economic independence

²⁶⁴ SEC (2005)370, March 2005

²⁶⁵ Council conclusions "Reinforcing human resources in science and technology in the ERA", 18/4/2005

²⁶⁶ COM(2006)0092 of 01/3/2006

for women and men; reconciliation of private and professional life; equal representation in decision-making; eradication of all forms of gender based violence; elimination of gender stereotypes; promotion of gender equality in external and development policies. For each area, it identified priority objectives and actions. DG Research was particularly concerned by three of these priority areas: reconciliation of private and professional life; equal representation in decision-making; and elimination of gender stereotypes. In 2008, an initial internal assessment was carried out on activities in the three areas concerning DG Research with the conclusion that: “DG RTD has made good progress in terms of its implementation of the Roadmap.” A final assessment of implementation will be made in 2010, with a new roadmap launched to continue with equal opportunity mainstreaming in European policies. The Roadmap represents the Commission’s commitment to driving the gender equality agenda forward by working closely with the

Member States, since the centre of gravity for action in many areas lies at Member State level – and, in addition, many cases of good practice in the reconciliation of private and professional life exist in the private sector (see Section 2.2 for details on private sector research).

The 2006 European Summit²⁶⁷, in acknowledging that gender equality policies are vital to economic growth, prosperity and competitiveness, stressed that it was time to make a firm commitment at European level to implement policies to promote women’s employment and to ensure a better work-life balance. To this end, the European Council approved the European Pact for Gender Equality (see Box)²⁶⁸.

²⁶⁷ Presidency Conclusions, Brussels European Council, 23/24 March 2006 (7775/06 of 24 March 2006)

²⁶⁸ Council of the European Union, Presidency conclusions – 23/24 March 2006, 7775/1/06 REV1

European Pact for Gender Equality

The Pact should serve “to enhance women’s participation in the labour market and to promote equality between women and men. The Pact should build on already existing objectives, targets and instruments within the Lisbon process, the integrated guidelines for growth and jobs, and the Roadmap for future EU gender equality policies”. The Pact should contribute to fulfilling EU ambitions on gender equality in the EC Treaty (Article 2 and Article 3.2), facilitate the full use of the productive potential of the European labour



force and close the gender gaps in employment and social protection, and meet the demographic challenges by promoting better work-life balance for women and men.

The Pact contains:

Measures to close gender gaps and combat gender stereotypes in the labour market:

- promote women's employment in all age brackets and reduce gender gaps in employment, including by combating all forms of discrimination
- equal pay for equal work
- combat gender stereotypes, in particular those related to the sex-segregated labour market and in education
- consider how to make welfare systems more women's employment friendly
- promote women's empowerment in political and economic life and women's entrepreneurship
- encourage social partners and enterprises to develop initiatives in favour of gender equality and promote gender equality plans at the workplace
- mainstreaming the gender perspective into all public activities.

Measures to promote a better work-life balance for all:

- achieve the objectives set at the European Council in Barcelona in March 2002 on the provision of childcare facilities
- improve the provision of care facilities for other dependents
- promote parental leave for both women and men.

Measures to reinforce governance through gender mainstreaming and better monitoring:

- ensure that gender equality effects are taken into account in impact assessments of new EU policies
- further develop statistics and indicators disaggregated by sex
- fully utilise opportunities presented by the establishment of the European Institute for Gender Equality.

Concern regarding human resources in research had already been expressed by a 2003 Commission report: "Motivations urging the European Union to deal with

gender inequality in the scientific field are not only based on the will to assert equal opportunities in this area, but also and above all on the intent of avoiding a waste of human

resources, incompatible with the objective that Europe has set itself of becoming the most competitive knowledge-based economy in the world”²⁶⁹. And the 2003 report on “Women in Industrial Research” stated: “It has been calculated, in fact, that if women followed the same path as men in the scientific career, Europe could have 55,000 more women researchers in the public sector and 200,000 in the private sector; a substantial figure, considering that at the end of 1990s, the number of university and public researchers stood at 722,000²⁷⁰ with 480,000 in the private sector”²⁷¹.

The Charter and Code are being implemented through the “Human Resources Strategy for Researchers”, which is a consequence of the initiative “Better careers and more mobility: a European partnership for researchers²⁷²”, launched in 2008. National action plans would be developed with the following priorities: Member States, funders and employers to improve the career

development opportunities for early-stage researchers by moving towards “flexicurity principles”, regular evaluation, wider autonomy and better training; research funders to take career development into account when evaluating research proposals; Member States, funders and employers to progressively introduce more flexibility in contractual and administrative arrangements and relevant national legislation for senior and end-of-career researchers to reward good performance and allow non-standard career paths; employers and funders should ensure that all publicly funded researchers receiving stipends and fellowships can receive adequate social security coverage; Member States and public research institutions to achieve adequate gender representation in selection and funding bodies, and to systematically adopt policies that enable both men and women to pursue a scientific career with an adequate work-life balance such as developing dual career policies. A number of new indicators were proposed to measure performance: attractive employment and working conditions; percentage of researchers on fixed term contracts and permanent contracts by institution and by Member State; percentage of senior researchers with alternative career paths; numbers of women in research positions and positions of responsibility by institution and Member State.

269 European Commission, European Report on Science and Technology Indicators. Towards a Knowledge-based Economy, Brussels, March 2003

270 European Commission, “The Helsinki Group on Women and Science – National Policies on Women in Science in Europe” – 2002, Luxembourg: Office for Official Publications of the European Communities

271 European Commission, “Women in Industrial Research – A wake-up call for European industry” – 2003, Luxembourg: Office for Official Publications of the European Communities

272 Better careers and more mobility: a European partnership for Researchers – COM(2008)317 final – May 2008



The important role of the Member States in addressing the problem of human resources in research has been recognised by the Member States themselves, and this was reflected in the launching of the so-called Ljubljana process at the informal meeting of the Competitiveness Council in 2008. The Ministers stated that the EU Member States and the European Commission would be jointly responsible for establishing a genuine single European Research Area, and agreed on a common vision for the ERA with the following features: mobility of researchers and attractive researcher careers, modern universities and research organisations ensuring global excellence (i.e. a researcher- and enterprise-friendly research environment) as well as a coordinated strategy for international cooperation in the area of science and technology. National action plans would be used to implement the common vision. The Ministers also agreed that the ERA could be achieved only through improved political management of the European Research Area, encompassing policies on research, education and innovation and involving all other actors – administrations, academic institutions, business and civil society. In this, the Member States would endeavour to intensively exchange examples of good practice, create new models and apply them in national research policies (in line with the open method of coordination), based on a detailed analysis of the situation and on a well-developed information system.

The first Slovenian presidency (January-June 2008) emphasized the importance of supporting “family-friendly scientific careers”²⁷³ since equal opportunities were recognised as a crucial part of the wider social dimension of the Lisbon Strategy. The Presidency worked on issues such as the elimination of gender stereotypes, and the enhancement of the participation and empowerment of women in society, with a view to achieving gender equality.

A Communication entitled “New skills for new jobs – anticipating and matching labour market and skills needs”²⁷⁴ was adopted in December 2008. It pointed out that the educational and professional choices of young men and women continue to be influenced by traditional gender paths. Reducing gender imbalances in sectors and occupations could partly address future skills shortages – for example, in technical and managerial occupations.

In March 2009, a public hearing on women in science was organised by two members of the European Parliament, Angelika Niebler, chair of the Industry Trade and Research committee, and Anna Záborská, chair of the Women’s Rights and Gender Equality Committee. The two deputies invited women

273 Council conclusions on Family-Friendly Scientific Careers – towards an Integrated Model – 2891st Competitiveness Council meeting on 29 and 30 May 2008

274 COM (2008)868 – 16/12/2008

researchers to discuss the women and science issue in their careers. It was recognised that the reconciliation of private and professional life was not always a priority for most research institutions in Europe, and women's careers in particular could suffer as a result. The meeting concluded that it was important to work on professional/personal life balance policies and measures – for both men and women. Transparent and fair evaluation and promotion procedures were also seen as important, but alone they would not be sufficient to improve gender balance in research decision-making. This would require a change of culture.

The issue of culture-change has risen to the fore in the Commission's plans. Activities on gender in research have continued under the 7th Framework Programme (FP7): the first two years of FP7 have formed an experimental phase, with several projects and studies funded. The activities are now entering a consolidation phase. The institutions that carry out research need to be engaged in a commitment to gender equality, and the private sector, policy makers and public funding agencies also need to be included. Several universities have already instigated interesting programmes that have a practical benefit for women in research, and could thus share their good practice. The 2008 FP7 Capacity Programme call for proposals already moved in this direction, with a topic on gender mainstreaming in management and the

sharing of good practice. The PRAGES project has produced "Guidelines for Gender Equality Programmes in Science", and these are publicly available (see Annex V for project details). Developing the European Research Area requires modernising universities, which in turn means updating human resource management to include gender management principles. This was the main theme of the conference organised by DG Research in Prague in May 2009, where the best practices of gender management were presented and discussed, and research institutions were encouraged to take up and implement these best practices (see Box at end of Section 3.3 g) for conference description and conclusions). The 2010 Science in Society work programme includes a direct action to promote such a structural change in research institutions. The institutions are invited to submit an action plan to be implemented in the following 3 to 5 years to change their management structure and make them more gender – and diversity – aware.



b) Mainstreaming gender in research throughout the Framework Programme

The motto «research by, for and on women» was announced at the beginning of women and science activities in 1999, and the objective was to integrate gender into the content of research – i.e. to examine whether biological and socio-cultural differences have implications for the objectives, methodology and implementation of research.

This section looks at how gender is mainstreamed into the research Framework Programme in general.

(See Section 4.3 c) for how gender is mainstreamed in the Science and/in Society field in particular;

For the texts covering gender issues in the implementation documents for the 6th and 7th Framework Programmes, see Appendix II;

For a detailed description of those FP7 “Cooperation” Specific Programme’s work programmes (2007-2010) that contained a reference to “gender”, see Annex III)

Assessments of the success or otherwise of integrating gender in the Framework Programme were carried out after the 5th Framework Programme (Gender Impact Assessment) and the 6th Framework Programme (Gender Monitoring Studies). This latter assessment was also able to check on the efficacy of a particular tool: the Gender Action Plan that was introduced in FP6, but discontinued for FP7.

The Gender Monitoring Studies provide an overview of the reasons for the lack of understanding of what “addressing gender in the research content” means, and of the practical implications. The Studies also found evidence of a lack of willingness to consider the gender dimension. The need for a better promotion of the benefits of integrating gender into research was highlighted, in order to achieve a greater acceptance of the concept.

The Women & Science Working Group has played a consistent role in the gender mainstreaming activities in the research Framework Programme, by supporting data collection throughout the 5th and 6th Framework Programmes, and has also supported the implementation of the Gender Impact Assessment and the Gender Monitoring Studies.

In its 1999 Communication “Mobilising women to enrich European research”²⁷⁵, the

275 COM(99)370 – 22 February 1999

Commission recognised the need to develop a coherent approach to the issue of gender in research. It proposed – for the **5th Framework Programme** (FP5, 1998-2002) –

promoting “research by, for and on women”. This meant developing activities aimed at increasing the participation of women in research, and having instruments to monitor progress (see Section 2.1). Promoting gender research, research on women, and gender in research, however, also needed to be included in the Framework Programmes.

The question “Do women do science differently from men?” was discussed in the 2000 ETAN report²⁷⁶, and received three different replies. For one group of scientists, science is an objective, disinterested activity far from personal input. Any style, and especially a “female” style, therefore, is an unheard-of heresy. For a second group, femininity is so essential that any activity undertaken by women bears the stamp of gender. For them, a female style, even in science, is inevitable for women doing science. Some argue that all science is contextual and situated in time. However, the report concludes: “where women have changed science, it is not so much a result of their female upbringing as of the development of gender awareness through women’s studies and gender studies”, and says that in the last two decades, many women scientists and scholars have criticised scientific concepts, methods and

methodologies for their unrecognised gender dimensions. The Commission was called upon to fund more research on the subject, through the Framework Programme.

The promotion of research on women in the 5th Framework Programme (1998-2002) consisted essentially of supporting gender-relevant research under the key action on “Improving the human resources potential and the socio-economic knowledge base”. The work programmes for this key action covered a wide range of questions including gender as a social construct, the evolution over time of men’s and women’s conditions, the situation of women on the labour market and in terms of social exclusion and integration, the prospects opened up to women by new models of development including the promotion of women as entrepreneur, and the place of women in emerging systems of governance and citizenship. In addition, research on the challenges of gender in policy-making processes was also included. Nothing was funded on the gendered epistemology of science.

In October 2003, during the Florence workshop on “Minimising gender bias in the definition and measurement of scientific excellence”²⁷⁷, and again in the 2005 working

²⁷⁶ European Commission “Science Policies in the European Union: Promoting excellence through mainstreaming gender equality”, 2000, a report from the ETAN Network on Women and Science, Luxembourg: Office for Official Publications of the European Communities

²⁷⁷ European Commission “Gender and Excellence in the Making”- 2004, European Commission, Luxembourg: Office for Official Publications of the European Communities



document “Excellence and innovation – Gender equality in science”²⁷⁸, the Commission was requested to fund more research on gender in science for a better understanding of the origin of bias, and in general, to strengthen gender research and the gender dimension in research.

The **6th Framework Programme** (FP6, 2002-2006) was organised into three main strands. In the first strand, “Integrating the European Research Area”, one of the Programmes was “Citizens and governance in a knowledge-based society”. This covered several issues with gender relevance, such as societal trends and quality of life, migration, labour market and welfare regimes, inequalities, religions and conflicts. One of the topics in this Programme dealt with “Gender and citizenship in a multicultural context” that resulted in several large projects covering gender issues from a societal aspect, including feminist movements and citizenship (FEMCIT), migration (FEMAGE, FEMIPOL) religion (VEIL, WAVE), human rights (CAHRV) and gender equality policies (QUING). The second strand, “Structuring the European Research Area (ERA)”, included the Programme “Science and Society” where, for the first time, a specific budget for women in science activities was foreseen (ca €15 million over 4 years). (See Section 4.3 c) for details on women in science activities)

278 SEC (2005)370 of March 2005

Under the **7th Framework Programme** (FP7, 2007-2013), gender is integrated within the legal FP7 Decision: “The integration of the gender dimension and gender equality will be addressed in all areas of research”. This translates into gender aspects being taken into account in the annual Work Programmes by making explicit reference to gender in the topics where it may be relevant. At the level of proposals and projects, there is a possibility of having a gender equality action as part of a Work Package, and gender can be the subject of negotiations, but it is too early to assess to what extent this has been taken up by projects in general. The lack of gender awareness has been addressed under FP7 with a contract that provides “gender toolkits” for several research themes, and gender training activities have been scheduled for 2009 and 2010. The main objective is to build gender capacity within the research community in order to ensure practical gender mainstreaming.

In order to assess the way in which gender issues were being addressed within the 5th Framework Programme (FP5), the European Commission launched, in June 2000, a *Gender Impact Assessment (GIA)*²⁷⁹ as requested by the 1999 Communication²⁸⁰.

279 European Commission “Gender in Research – Gender Impact Assessment of the specific programmes of the Fifth Framework Programme” – 2001, Luxembourg: Office for Official Publications of the European Communities

280 COM (1999) 370 of 22 February 1999

The studies were carried out by seven research teams representing European universities, research institutes and companies specialised in gender research, which were selected following a call for tender. The studies focused on the thematic programmes of FP5 – Quality of Life and Management of Living Resources, User-Friendly Information Society and Energy, Environment and Sustainable Development – and the three horizontal programmes – Confirming the International Role of Community Research, Promotion of Innovation and Encouragement of Participation of Small and Medium-sized Enterprises and Improving Human Research Potential and the Socio-economic Knowledge Base. Each study produced an overview of the current state of knowledge of gender issues in each FP5 research area; an analysis of the implementation of each specific programme, including the participation of women and men and the mainstreaming of gender in programme management and implementation processes (e.g. proposal writing material and evaluation criteria); and an assessment of the gender impact on the research area (how the gender dimension was incorporated into the content of each Work Programme and the proposals submitted). Each study brought key elements from their working papers into a final report, which included recommendations on how the gender dimension could be better integrated in future activities. One recommendation was to better mainstream

gender in research areas – e.g. guidance should be given to identify the potential gender impacts of the research areas and encourage proposers to conduct gender-sensitive research.

Since the promotion of research on gender in FP5 was confined to the Human Potential Programme, the GIA studies recommended the introduction of gender as a target of research in all Work Programmes, as well as a transversal theme – encouraging and guiding applicants to address gender systematically in each relevant part of research design. The socio-economic approach of research, said the GIA, should be considered a precondition for the integration of the gender perspective, apart from the Quality of Life Programme where biological sex differences can call for a natural science approach. In addition, research design should allow the identification of diverse human populations to be studied, and research methodology should include socio-economic analysis methods in order to integrate the gender dimension. The studies called for continuity in research themes and subjects, as research communities and gender networks need time to adapt to new avenues of research, and new scientific networks take time to be set up. Several recommendations targeted the structure and procedures of the next Framework Programme, saying that the proposal preparation material and



management tools should be drafted in a more gender sensitive way.

The GIA studies were presented at the conference organised by the Commission in 2001 on “Gender and Research”²⁸¹. Overall, it was agreed that the GIA exercise had served as a learning tool for the Commission. The process had not been an easy one. Science, the scientific community and the decision makers were resistant to the gender question – science being perceived as gender-neutral. As regard to the participation of women in FP5, the studies generally found that great effort had been made to increase the numbers of women in panels and committees, due to the set target of 40%. It was in terms of gender mainstreaming – the integration of the gender dimension at all levels of the Programme – that there were serious shortcomings. A lack of attention to gender in the work programmes, the information packs and the evaluation process, for instance, impacted in turn the way in which gender was taken into account, or not, in the content of the research work itself. Hence, even in thematic areas where there was an obvious gender dimension, such as health research or socio-economic research, it tended not to be given due consideration.

281 European Commission “Gender and Research: Conference Proceedings, Brussels, 8-9 November 2001”, 2002, Luxembourg: Office for Official Publications of the European Communities

In order to follow up on these recommendations, several instruments and procedures were established on gender in the 6th Framework Programme (FP6). The main approach was the *Gender Action Plan* (GAP), included in the guide for applicants for two of the main funding instruments: Networks of Excellence and Integrated Projects. Indeed, due to their expected structuring effect on scientific research, proposals under these funding instruments were requested to design and implement an action plan to promote gender equality in the project. These action plans were a set of measures chosen by the contractors, according to their analysis of what was appropriate for the project, and on the basis of their comprehension of the gender issue in research. In 2003, to facilitate this process, the Commission prepared a *Vademecum* for Gender Mainstreaming in FP6 (as a reference guide for scientific and project officers on how to implement gender mainstreaming throughout the whole process: from the publication of the call to the management of a contract). In 2004, it also published a “Compendium of best practices” and a brief guide on how to prepare a GAP.

The objectives of the Gender Action Plan were: to increase women’s (or men’s, where men were in a strong minority) participation within the research workforce, especially at decision-making level; to allow a better understanding of the gender dimension in research, especially for the definition and the

evaluation of scientific excellence; to raise the gender awareness of different categories of actors, within and outside the European Commission, involved in the design, the evaluation, the selection, the negotiation, the realisation, the implementation and the follow-up of research projects; to highlight the respective responsibility of each actor regarding the EU commitment to ensure gender equality and to implement a gender mainstreaming strategy in all its policies and programmes, including the Research policy and the Framework Programme.

Unfortunately, the implementation of the GAPs was problematic and the 2005 staff working document²⁸² concluded that a “more efficient monitoring of the Framework Programme is needed: the gender database and monitoring system need to be updated, regular progress reports, including gender action plans, need to be established ...”.

As a continuation of the FP5 Gender Impact Assessment exercise, six studies called *Gender Monitoring Studies* (GMS) were carried out between 2004 and 2008 to monitor progress towards gender equality and gender relevance awareness during the 6th Framework Programme (FP6). The 2009

synthesis report²⁸³ presented the key findings of these studies. Here again, each study focused on different aspects of the research thematic priorities, monitoring how gender issues were taken into account and making recommendations for better integration in the future. All Commission funded projects were required to consider the integration of gender into the content of research (i.e. examining whether biological and socio-cultural differences have implications for the objectives, methodology and implementation of the research), but many projects failed to do so.

The study on “Science and Society” and “Citizens and Governance in a knowledge-based society” programmes found, for example, that 25% of the projects in the “Science and Society” area and up to 60% of the projects in “Citizens and governance in a knowledge-based society” had integrated gender, in the following different ways: sex disaggregated figures (quantitative or statistical approach); acknowledgement of specific characteristics or requirements of women and therefore of specific issues to be addressed in the research; recognition of gender differences in roles and responsibilities which might be interrelated (gender relations); recognition of inequalities.

²⁸² European Commission “Women and Science – Excellence and Innovation – Gender Equality in Science” – 2005, SEC(2005)370

²⁸³ European Commission “Monitoring Progress Towards Gender Equality in the 6th Framework Programme” – Synthesis Report by the Centre for Strategies and Evaluation Services (CSES) – 2009, Luxembourg: Office for Official Publications of the European Union



In the study on Nanotech, Aeronautics and Energy programmes, it was found that the relevance of gender in the research content was frequently questioned.

However, the study found good examples of research projects in which the integration of the gender dimension had clearly enhanced scientific excellence. The studies found that this important aspect of research was frequently overlooked by the FP6 projects due, mainly, to a lack of understanding of the concept, compounded by an inability to identify practical measures to deal with it. If gender in the research content was considered, biological differences tended to be explored without due regard to the socio-economic aspects which were often just as important.

The GMS report concluded that: “although examples of good practice existed, the studies highlighted an overall tendency for projects to overlook the importance of addressing gender to guarantee the validity of scientific results and to ensure that products and results met the needs of all population groups. The integration of the gender dimension into the content of the research was hampered by two key difficulties: firstly, the concept was not that well understood and secondly this lack of understanding meant that there were challenges in identifying practical measures that could have been undertaken to address the gender aspects in the research. Projects

supported under FP6 seemed to be particularly weak in considering the gender differentiated impact of their research. There appeared to be an underlying assumption that women’s and men’s needs were by default equally taken into consideration. The projects mainly attempted to demonstrate that they understood the issues around gender inequality and that gender was integrated within the actions of the projects. There was little reference to gender in the described results or the impacts of the projects.”

The GMS recommended that closer monitoring of project implementation was needed in order to measure the commitments made by the projects in this area. One study noted that the area of “Support or co-ordination activities” seemed to have the gender dimension quite successfully integrated according to project documentation, but in the absence of any follow-up on implementation, it was not possible to say whether the gender aspect was successfully integrated into the projects.

Key considerations for integrating gender into research:

- **Are there any differences in the biological needs of women and men that are relevant to the subject of the research?** For example, projects analysing the environmental impact of new technologies might need to include both men and women as subjects of the research since resulting effects might be different in each case. Another example might be the development of new materials or tools to help improve working conditions, in which case physiological diversity should be taken into consideration.
- **Do differences exist in the gender roles performed by men and women and how can they be addressed in the research, especially in the application of the results of the research?** A key question here might be whether the research outputs could be used by men and women in different ways and for different purposes. Identifying different categories of end-users and other stakeholders should be an important task in this regard.
- **Projects could also have wider reaching impacts for men and women through policymaking initiatives that rely on the results of the projects.** For example, in the field of EURATOM, the research findings, on the impact of low level radiation on different groups in society, such as males and females of reproductive age, children etc., might have implications for future policies on the use of nuclear energy. Therefore, including a gender dimension in the assessment of project outcomes and impacts might be important.
- **The systematic compilation of sex disaggregated data** (i.e. disaggregated data on both male and female subjects of research) relating to indicators and statistical data collection would be a useful tool that could be used to ensure that research meets the needs of its male and female citizens.

The GMS also analysed the Gender Action Plans (GAPs) and their impact. Overall, the analyses indicated that GAPs were a useful tool for raising awareness about the importance of gender equality in science and to some extent influenced the degree to which gender was integrated into the projects. Unfortunately the quality of the submitted GAPs was quite variable. Only an

estimated 15-25% of the GAPs that were analysed in the GMS were regarded as very good or excellent²⁸⁴. Most of the planned actions related to increasing the participation of women, while the gender aspect of the

²⁸⁴ E.g. Study 2 found that 23% of the GAPs might be considered good, while the rest were satisfactory or poor. Studies used differing criteria to assess GAPs



research content was rarely included. The contribution of gender considerations to overall scientific excellence was also neglected. This hampered the GAPs' impact on gender integration in the projects. Projects rarely assigned budgets to GAPs and without financial commitments in situ, the likelihood of implementing the planned gender related actions was reduced. Moreover, no reliable indicators existed that could have helped assess the implementation of the GAPs, as only a minority of projects provided GAP progress reports.

Still, there were clear signs that GAPs had some positive effects on the integration of gender in projects, which would not have been realised without the undertaken efforts. The introduction of GAPs also encountered some unexpected gains for gender equality beyond the Integrated Projects and Networks of Excellence. Some studies came across several proposals with well developed GAPs in instruments for which they were not a requirement. Apart from the image of GAPs as a low priority, a general lack of knowledge about gender equality in FP6 also contributed to the poor quality of GAPs. In general, the monitoring of any GAP implementation was found to be quite weak.

The conclusion was that, in spite of the weaknesses identified in many GAPs, there was a consensus among the gender monitoring studies that they should be retained in future Framework Programmes,

albeit in a revised format. It was said that GAPs could have the potential to become a very effective tool if they were more rigorously evaluated and implemented – and made more user-friendly to both project holders and evaluators. Changing or abandoning the system would be seen as sending a negative message on the importance given to the gender dimension in the research content, and in the Framework Programmes more generally. Having a specific instrument that addressed gender issues in projects certainly helped to raise the profile of the importance of gender in FP6. However, care should have been taken to ensure that they were properly integrated into the project plan. Recommendations were given in the Gender Monitoring Studies on how the gender dimension could be integrated into each research area and which procedural and legal tools could be used to achieve this in the 7th Framework Programme.

These recommendations arrived too late – FP7 was already launched, together with the decision to remove the GAPs. As Commissioner Potočník said in Prague (Conference in May 2009)²⁸⁵: “their implementation was not optimal within the Commission: there were technical problems, a low gender awareness among the scientific community and also among Commission

285 “Changing research landscapes to make the most of human potential – 10 years of EU activities on Women in Science, and beyond”, Prague, 14-15 May 2009

officials (which) made it extremely difficult to obtain the maximum benefit from this new instrument. On the other hand, it's also true that the scientific community, rather than asking us to improve the implementation, wanted the GAPs removed completely." Indeed, GAPs were criticised as putting an additional administrative burden on projects, and this was seen as being in conflict with the Commission's general commitment to simplify the Framework Programme procedures and lighten the bureaucratic burden.

Nevertheless, the Commission's commitment to gender mainstreaming continued and is now embedded in the FP7 Decision itself. The Work Programmes encourage women's participation in research, and mention or highlight the relevance of gender in specific topics. Recently, a monitoring mechanism was introduced to ensure that Work Programmes take gender into account. In addition, large projects still have the possibility and are encouraged to include

gender equality actions in their projects, and these are treated as regular, reimbursable actions. Gender actions can be included in the proposals and discussed at negotiation stage. The negotiation guide for programme applicants, published in June 2007, includes an appendix on "How to consider gender aspects in projects" (Appendix 7).

In November 2007, the DG Research internal working group, "Women & Research" conducted an analysis of gender aspects in the 7th Framework Programme. The aim of such analysis is to have gender research included in FP7 annual work programmes, and also to support the inclusion of gender aspects in research domains through the FP7 annual work programmes and/or contract negotiations. In addition, DG Research continues to collect gender statistics on all completed FP6 contracts as well as proposals submitted under FP7. This activity has resulted in the publication of reporting guidelines for applicants to FP7, which contain a gender questionnaire.



c) Mainstreaming gender in research in the Framework Programme's field of Science and/in Society

This section provides an overview of the role of gender in research (in particular, women in science) for the Science and/in Society field – from the 4th to the 7th Framework Programme.

See Section 4.3 b) for information on gender mainstreaming in the Framework Programmes generally, as well as information on the Gender Impact Assessment exercise, the Gender Action Plans and the Gender Monitoring Studies.

Annex IV contains the texts for the Science and/in Society calls on gender under the Framework Programmes, and Annex V has details on the projects that answered these calls.

For the first time, the 6th Framework Programme had a specific budget for women in science activities: ca €15 million over 4 years, thereby marking the beginning of dedicated activities for women in science with a dedicated budget.

In the first 4 years of the 7th Framework Programme, gender in research has received funding of €21.7 million.

In the **4th Framework Programme** for research (1994-1998), there was no mention of gender mainstreaming as such, but there was a reference in the introduction to the fourth activity (the stimulation of training and mobility of researchers) to the need to ensure equal opportunity for men and women researchers. During the 1993 conference²⁸⁶ a request was made to include “equal opportunity” in the list of requirements in

order to receive funding in FP4, but this call was not met.

At the beginning of **5th Framework Programme** (FP5, 1998-2000), the Commission Communication on Women and Science²⁸⁷ in 1999 stated that “when drawing up and implementing the Work Programmes, account will be taken of a possible gender dimension in the problems and challenges addressed by the Key Actions and, in a broader sense, by the specific programmes as a whole. Wherever the topic merits consideration from a gender

286 European Commission, “Women in Science – International Workshop – 15th to 16th February 1993, Brussels – Proceedings”, edited by H.A. Logue & L.M. Talapessy, Luxembourg: Office for Official Publications of the European Communities

287 COM(1999)76

point of view this will be stated in the Call for Proposals". It was recognised that gender was part of a process, and its effectiveness would depend upon the gender awareness of the Commission officials responsible for the Work Programme, until the overall level of gender expertise was improved and opportunities to incorporate the gender dimension were made explicit.

FP5 was divided into four thematic programmes complemented by three horizontal programmes. One of the latter was "Improving the human research potential and the socio-economic knowledge base". Gender aspects were integrated in several of the topics open to calls for proposals, e.g. societal change, employment, governance and citizenship. Many projects funded under these topics touched upon or even focused on gender issues in the specific research topic. In some of the Work Programmes, a general paragraph invited proposers to take into account a number of horizontal aspects, including gender. The specific field of "women in science", however, was not included in the Work Programmes.

The 1999 Communication also announced that a Gender Impact Assessment (GIA) should be launched in a synchronised manner within each specific programme in order to introduce a dynamic and critical dimension in the way gender questions are treated throughout FP5 and in order that their results should be available for the

design of future research policies. This series of studies mapped the situation on gender mainstreaming in FP5 and proposed a number of recommendations to better integrate gender issues at the various stages of the FP, to raise awareness and expertise on gender, to compile better data on female participation, and to improve the gender dimension in research. These recommendations were based on the situation at the time where the participation of women in FP activities was beginning to be monitored but no complete data were available. The target of 40% women in various executive bodies and among evaluators was beginning to have a positive effect on women's participation, but in the call for proposal / project cycle, gender mainstreaming had no role. There was little reference to gender in the research topics, or in the documentation. This of course translated into very little inclusion of gender in the proposals submitted for funding and the financed projects.

The **6th Framework Programme** (FP6, 2002-2006) was built around "integrating" and "strengthening" the European Research Area on the one hand, and "structuring the ERA" on the other. Whereas the former covered several research fields, the latter addressed structural weaknesses across European fields of research. Generally FP6 called for attention to a range of horizontal issues including gender issues. In the "integrating ERA" strand, one of the



Programmes was “Citizens and governance in a knowledge-based society”, which yielded several large projects where gender issues were linked to humanities or social issues (see Section 4.3.b) for details). In the “structuring ERA” strand, the Programme on Science and Society included, for the first time, a specific budget for women in science activities. This dedicated activity was financed in FP6 with ca €15 million over 4 years. FP6 therefore marks the beginning of dedicated activities for women in science with a dedicated budget.

Gender Action Plans (GAPs) were introduced in FP6 as the main instrument for gender mainstreaming at project level. (See Section 4.3 b) for further detail) These Plans were obligatory for large-scale projects. The Gender Monitoring Studies (GMS)²⁸⁸ that were carried out on FP6 found that the Gender Action Plans were the most prominent tool for gender mainstreaming in research projects, and very useful for awareness-raising on gender. There were good examples of GAP implementation. However, they were often not taken seriously because the GAP was not assessed during the proposal evaluation. There was no requirement to have an earmarked budget for gender activities so GAPs were often

perceived as a bureaucratic requirement. In addition, DG Research staff did not always monitor implementation and, generally, scientific officers and proposers showed a lack of knowledge on gender issues. As far as gender in the content of the research, the GMS found that this important aspect of research was often overlooked by the FP6 projects, due mainly to a lack of understanding of the concept, compound by the inability to identify practical measures to deal with it. (See Section 4.3 b) for further detail on the Gender Monitoring Studies).

Under the 6th Framework Programme, funding for women in science was restricted to only support and coordinated actions, useful for creating structures for the European Research Area. Only limited funding was available for studies and analysis. Amongst the funded projects, therefore, only few aimed primarily at building the knowledge base on the subject (KNOWING and UPGEM), while the majority dealt with gender issues in specific scientific fields (e.g. WOMENCORE, WOSISTER, PROMETEA were linked to the construction sector, agriculture, engineering).

Aware of this shortcoming in the field of gender research, but also of the risk of double funding, the Commission began its gender activities under Science in Society in the 7th Framework Programme (FP7) with the launch of a public procurement, aimed at creating a European database on gender

288 European Commission, “Monitoring Progress Towards Gender Equality in the 6th Framework Programme – Synthesis report by the Centre for Strategies and Evaluation Services (CSES)”; May 2009, Luxembourg: Office for Official Publications of the European Communities

research. The database will contain the results of a meta-analysis carried out on the existence of “gender and science” research on several listed topics (related to vertical and horizontal segregation, their causes and effects) – on the national and European levels. The objective is to identify those areas where more research or coordination is needed, and to ensure sound policy-making based on scientific grounds. The meta-analysis results will be ready by the end of 2010²⁸⁹.

The **7th Framework Programme** (FP7) is built around five specific programmes (Cooperation, Capacities, Ideas, People, Euratom). The Capacities programme includes “Science in Society”, which contains activities on gender in research. These activities follow on from the “women in science” activities in FP6. In the first 4 years of FP7, €21.7 million has been spent on gender in research, through a dedicated budget every year (€4.5 million in 2007, €4.7 million in 2008, €5.6 million in 2009 and €6.9 million in 2010).

Since 2002, at the time when “women in science” specific activities began, over 30 projects have been funded (under FP6 and FP7). These projects have been aimed primarily at building the knowledge base on the subject of women in science, collecting

good practice experiences, and launching specific activities that had been identified as important. (See Appendix V for more detail on the projects.)

The activities financed under FP6 and FP7 have fallen under the following thematic strands:

1) Networking and gender awareness:

“Networking the networks” of women scientists began with a feasibility study (2003), followed by a project to create a database of women scientists’ networks (DATAWOMSCI), and then the project creating the European Platform of Women Scientists (PLATWOMSCI 2004-2008 followed by the grant to EPWS in 2009-2010). In parallel, an analysis of the new Member States (ENWISE) was undertaken. Activities specific to these countries were financed via another project (CEC-WYS) and then via new networks (BASNET, NEWS). Raising the public debate on women and science, and collecting good practices was also the main focus in other parts of Europe, and led to several projects (UNICAFE, WS-DEBATE, EUROWISTDOM, ADVANCE, TWIST, GENSET and GENDERA).

2) Recruiting young women, and then retaining them:

In 2004, the Helsinki Group (see Section 2.3) suggested financing ambassadors for women in science (projects DIVA, WOMENINNANO, PALLAS-ATHENE). This

289 Preliminary information is available on www.genderandscience.org



activity was one way to encourage young people in general, and girls in particular, to take up the “hard” sciences. This was continued later on by funding projects on encouraging young women to follow and stay in science and engineering careers (IFAC, SET ROUTES, TANDEMplusIDEA), and to participate in research governance (ENCOUWOMSCI, EUMENT-NET). More recently, the emphasis has been on gender management in research institutions and universities to ensure that women can reach the top positions in research (PRAGES, WHIST, DIVERSITY).

3) Gendered research:

Another important strand of action has been linked to gender issues in scientific research, particularly positive action programmes and equal opportunities policies. Many projects (WOMENCORE, KNOWING, WOSISTER, PROMETEA, UPGEM) have studied these activities in specific disciplines (physics, construction sector, agriculture, engineering and have extended the knowledge base on the subject. A second wave of projects was funded to cover more topics, e.g. women researchers entrepreneurs, technology transfer officers, patenting. (FEMSTART, ESGI, WIST).

4) Is there excellence without gender?

The issue of gender and excellence was first brought up at conferences (ELSA, 2003 Florence workshop), and then by a report in 2004 on gender and excellence, and a report

in 2009 on the role of gender in research funding.

5) Gender mainstreaming projects:

The final strand of activities is linked to gender mainstreaming, including both mainstreaming tools and gender in research. GENDERBASIC and GB_MANAGEMENT refer to gender issues in medical research, and gender budgeting as tools, whereas TRANSGEN looks at transport research from a gender point of view, and WONBIT at gender in biotechnologies. In 2008, the provision of gender toolkits and training activities will build on past experience to make results available to the research community.

End Note

*Projects financed under each “call for proposal” in S&S/ SiS, per theme
(see Annex IV for Call texts, and Annex V for project details)*

Theme	FP6-2002-S&S-1	FP6-2002-S&S-6	FP6-2004-S&S-10
Policy debate Awareness raising	ERA GENDER		
Networking - Empowerment of w in science / top positions	CEC-WYS DATAWOMSCI	PLATWOMSCI	NEWS BASNET
Private sector	WIR		WIST
Ambassadors - SET careers - governance			DIVA Pallas-Athene Women InNano
Research Knowledge base on women in science			WOMENCORE PROMETEA KNOWING UPGEM WOSISTER
Mainstreaming tools + Mainstreaming research			GENDER-BASIC
Excellence		"Excellence in the making" seminar	

FP6-2005-S&S-17	FP7 - SiS-2007-1	FP7 - SiS-2008-1	FP7 - SiS-2009-1
Benchmarking national measures - PP WS-DEBATE EUROWISTDOM	14 th ICWES		TWIST
ADVANCE	PRAGES	EPWS DIVERSITY WHIST	GEN SET GENDERA
FEMSTART	WIST (2)		
IFAC SETROUTES TANDEMplusIDEA EUMENT-NET ENCOUWOMSCI			
UNICAFE ESGI WIST	Meta-analysis - PP	HELENA IRIS	
GB_Management TRANSGEN WONBIT	Gender toolkit and training – PP		
ELSA	Gender & Excellence working group		



Conclusions

In this chapter, we are carrying out a stock take of the initiatives that have been realised during the first 10 years of our activities. In doing so, we draw attention to the omissions and also suggest possible future actions to address these omissions.

For clarity, these Conclusions follow the structure of the preceding chapters.

1. Policy development

The major achievement of these 10 years of activity in “women in science” has been the identification of the problem (too few women choose to work in science and technology, and too many leave the field in the beginning or middle of their career) and the launch of a specific policy to tackle the problem. The major EU institutions focused on this, and decided on strategies to be implemented, while the Member States’ authorities – to very different extents – did the same. As part of the process, Member States’ legislation, policies and activities for “women in science” have been analysed and benchmarked. Their representatives have met regularly, and the cross-comparison of activities has stimulated emulation and transfer. In addition, the European Union has been open to learning from those third countries where the effort to promote gender and diversity in science started earlier, such as the US, and it now also is offering to share its experiences with other countries, such as the Associated Countries, where this knowledge is not yet available.

Despite all the activities promoted, neither the European Commission nor Member States – with some exceptions – has reached the level of women’s participation in research at the decision-making level, as suggested by the EU (25%).

One of the major problems encountered has been the discontinuity of political support. There have been moments in which a wave of interest has rapidly driven activities, interspersed with moments of stagnation when all good intentions were left behind. With every political change, gender issues have come back onto the table, just as if they had never been previously debated, and every time the new decision-makers have had to be convinced about the right of gender issues to remain on the table, to be addressed, and to be followed up in all social fields, science included.

This follow-up should culminate with a clear statement, a clear policy document, endorsed by all the Member States and the EU institutions, fixing once and for all the basic principle: there cannot be quality in science and research without a balanced involvement of both the sexes in research decision-making – decisions regarding the direction taken by the research, and in the definition of priorities and targets. There cannot be quality in research if it focuses only on the characteristics, the needs and objectives of just half the world’s population. Of course this endorsement cannot only be



political. The major stakeholders in science and technology also have to adhere to it, as well as all scientists and researchers, and the public at large. The public needs to be involved in the debate, not just informed, in order to break the eternal circle of stereotyping girls' and boys' career choices, family and professional roles.

The second main problem has indeed been the lack of support from the majority of the scientific community and the general public. The attitudes are generally not openly hostile, but show a lack of awareness. The challenge has been to find a way to share knowledge on the issue. A website does exist with the relevant information, but this is clearly not sufficient since it presupposes interest on the part of the public – an interest strong enough to motivate a search. New ways of spreading information and creating debate are needed.

It is easy to say what is needed, but it is extremely difficult to actually put it into place. It is clear that political support must be ensured at all levels: national and European. The new Commission should have a central role in this. The European and national parliaments must be involved in a very direct and evident way – for instance, through information sessions, seminars, mentoring schemes (a gender expert mentoring a deputy). The Helsinki Group could lead this effort at the national level, first revamping the role of the national steering committees in

the Member States. In general, a more dynamic cooperation with Member States should be organised, via the Helsinki Group and its new role.

In order to get the message out to all concerned – policy-makers, scientists and the public at large – there needs to be a major communication effort. The European Commission has already funded some projects to this effect (GenSET and GENDERA focus on the scientific community and the research decision makers, while TWIST focuses on the public at large – see annex V) but is also planning a more comprehensive communication campaign to be launched in 2011. This will have a clear and effective message, focusing on one or two main issues only, being careful not to disperse the attention of the public.

In addition, the Commission will make an effort to promote the results obtained in the past through working groups and projects. How this can be done, is not yet clear. A new web tool has been created to collect the essential results of 6th Framework Programme projects (PIDS); there could be a regularly distributed newsletter on the policies promoted, or the inclusion of “women in science” policy news in more general periodic publications or newsletters (e.g. Research*EU, Cordis, national “women in science” associations' websites, EU policy websites and journals). There remains, however, a large question mark over how the

European Commission could involve national television: broadcasting “women in science” information on TV would quickly reach a very substantial part of the European public. Some short films have already been broadcast, but on special occasions (International Women’s Day on 8 March, for instance), or on scientific TV programmes (with small audiences). More should also be done to reach young people by using their own technologies, such as the internet, social networking sites, YouTube and blogs – all of which could also be used for the wider public. Media activities could include, for example, radio debates or TV thematic evenings on women researchers (with also some negative experiences for women researchers in higher education and industry).

More should also be done on a worldwide level: too many efforts are repeated in various world regions, not benefiting from the experiences of others. This results in a waste of energy, resources and time. Better operational relationships could be ensured by working together with global organisations who deal with the same issues, such as OECD and UNESCO. European best practices should be known on the worldwide scene, in order for the EU to learn from others and for the rest of the world to be also able to benefit from the result of ten years of EU policy on “women in science”.

2. Knowing the situation of women in science

Data collection

The collection of sex disaggregated data was essential for the launch of the “women in science” policy. “No data, no problem, no policy”, was the argument used in the 1999 ETAN report. Ten years later we have a tradition of reliable statistics collection, which allows us to adequately compare and contrast the situation in EU 27 Member States, and beyond. “Adequate”, of course means that a further harmonisation of indicators is needed, as well as refining others (e.g. the various treatments of academic/researcher levels in Member States). In addition, new avenues for data collection should be explored – e.g. gender pay-gap, ways to measure researcher, and research institution, productivity. To address the issue of further development, the European Commission is setting up an expert group composed of representatives from the Member States, Eurostat, DG Research and the OECD. The group will recommend new indicators at national and EU level in order to improve the next publication of “She Figures” (2012). One area where sex disaggregated data is not yet available is patent application and delivery, but the availability of patenting data depends on the European Patent Office, not on the European Commission.



There have been many requests for a women-scientists-only-database, and an attempt to create something similar was made by the European Platform of Women Scientists, but the European Commission prefers to encourage women to register in the existing mainstream databases that are normally consulted when specialists are sought in various fields – such as the database from where expert evaluators are selected.

Private sector

The working group Women in Science and Technology (WIST), previously known as Women in Industrial Research (WIR), is one of the major success stories of the “women and science” policy promoted by the European Commission. Although industry is the biggest employer of researchers in Europe, only 18% of these researchers are women. Industry realised that addressing this imbalance could not be left to the “natural order of things”, and that excluding women from research and, in particular, from leading their research, must imply economic loss because of the opportunity missed: the opportunity to use the untapped potential of talented professionals.

The WIR/WIST group is the only example – at EU level – of a working group where industry participates without the intention/perspective of immediate gain. The WIR/WIST working group does not decide funding or market distribution, or market

rules – it looks at human resources management. It is about how to “stop the pipeline leaking”, about how to convince the large number of women graduates to enter the pool of technological and scientific specialists so that they could be hired in the future, as young talent, by the same industries.

Despite the recent economic crisis, the interest of industry to continue working on these issues has not faded – perhaps this is because there are those who do agree with the suggestion that if the Lehmans were sisters, and not brothers, this crisis would have not have taken place. There are of course weaknesses in the working group as well. The companies involved are all multinational companies who employ millions of workers all around the world. Their gender sensitive human resources management policies are probably the first and easiest way for them to address the diversity existing among their staff. Their policies are difficult to apply in small and medium enterprises, where resources and time to deal with such aspects are less available, or where there could be a lack of diversity (national level companies or, especially, regional/local companies).

A new round of analysis will be proposed by the European Commission to the companies taking part in the working group – this time on the effect that the economic crisis has had on their gendered policies in human

resources. The main question could be: “were these policies cut as being non-essential expenditures in the face of a crisis, or were they used to prove that more women in the decision-making boards mitigated the effect of the crisis?” It would be particularly interesting to include the banking and finance sector in the analysis.

Research has proved that a cultural change in the working environment and working culture is needed and that such a change could improve company results. Strategies on how to disseminate this information in the private sector, especially to small and medium enterprises, should be developed, perhaps in cooperation with DG Employment and Social Affairs and DG Enterprise.

To increase awareness about the availability of simple tools or remedies to mitigate workforce problems in companies, perhaps a greater involvement of social partners (trade unions, professional organisations, and company associations) could be envisaged. In addition, a specific initiative could be promoted at the source of human resources (HR) management training: gender sensitive policies should be taught in HR management schools worldwide, to avoid a situation where the same mistakes are repeatedly made by new recruits in HR management.

Some initiatives could also be promoted to increase the role of the private sector in

raising the interest of young people (especially young girls) in science and technology careers. Studies demonstrate that young people of career-choice age (15-17 y.) lack information about which careers are possible in the various scientific fields. Providing them with updated examples and role models could fill this gap and encourage them to consider scientific and technological studies.

Helsinki Group on Women in Science

The European Commission set up the Helsinki Group on Women in Science (HG) to directly involve the Member States (MS) in a policy dialogue and also to find out what was happening in the MS regarding “women in science”. For the MS themselves, the exchange of good practice has provided an opportunity to improve their own policies in the field. As a DG Research advisory group, which has been in existence since the creation of the policy in 1999, the HG is quite exceptional since advisory groups usually change their configuration and members at the end of each Framework Programme.

Unfortunately, the role of the Helsinki Group has become vaguer over the years, and needs to be made more specific. The efficacy of the HG is dependent on the people appointed by the Member States, by their understanding of, and interests in the issues, and this efficacy has of course changed over time. Since the European Commission can only encourage cooperation



from and between the MS, a greater involvement on part of the HG at national level, through networking and lobbying, could encourage the better inclusion of “women in science” issues in national research policy. The way the HG works could be improved. More decisions could be prepared remotely by a smaller group, as was done for the Mandate, with the actual meeting giving its formal approval. And with increased information exchange before the meetings, there would be more time during the meeting to focus on input from the HG to the Commission.

In its Position Paper, submitted to the first Barroso Commission in December 2009, the Helsinki Group reviewed its role, and listed a number of urgent tasks to be undertaken by the European Commission and the HG members. These tasks included: enhancing the participation of women in science (particularly in leading positions, also by setting challenging but realistic targets); supporting the development of working conditions and cultures in academia/industry towards a more inclusive environment that allows women to fully develop their potential; integrating the gender dimension in research; and encouraging the participation of women scientists in the Framework Programme. In addition, the HG saw the need to implement the gender aspect, as a horizontal and vertical axis, in all Work Programmes of the Framework Programme, and to have in place gender

monitoring of the 7th Framework Programme (linked to the upcoming mid-term assessment of FP7).

As regards the suggestions for work to be carried out by the members of the Helsinki Group, there are two tasks that, from the Commission’s point of view, appear to be particularly useful. Firstly, a thorough knowledge on part of the HG of the “European Charter for Researchers and the Code of Conduct for their recruitment”²⁹⁰ and also of the communication on “Better careers and more mobility: a European partnership for researchers”²⁹¹ would be useful. Thorough knowledge would entail knowing what the MS positions are in relation to these initiatives and what impact they might have on the recruitment and career advancement of female researchers. An assessment could then be made of the numerous and frequently excellent initiatives at national level to increase the participation of female researchers, to see whether these are in line with the Charter and Code, and with the Partnership for researchers, or whether these adopt additional approaches not included in the Commission documents. Secondly, the HG could have a principal role in liaising with their research policy colleagues in the ministries, especially in view of the mid-term evaluation of the

290 C(2005) 576 final – http://ec.europa.eu/euraxess/index_en.cfm?l1=0&l2=3

291 http://ec.europa.eu/euraxess/index_en.cfm?l1=19&l2=0&l3=0

Framework Programmes, and the preparation of the next research programmes, in order to re-include gender as a clear and measurable priority.

3. Recruiting, promoting and retaining women researchers

40% target for women in European Commission panels, etc

The Communication²⁹² adopted in 1999 included the aim of significantly increasing the number of women involved in research during the period of the 5th Framework Programme. The European Commission's stated aim was to achieve at least a 40% representation of women in Marie Curie scholarships, advisory groups, assessment panels and monitoring panels. This target was subsequently expanded to include all groups, panels, committees and projects involved in the Framework Programme. The 40% target remained in place for FP6 – but changed to “40% of each under-represented sex” – and is currently in place for FP7²⁹³. The creation of a target has been a major result, not least because targets were later adopted by some Member States for the representation of women in their own panels

and advisory groups. Some countries have gone further by imposing quotas, but this is not the preferred solution for the Commission.

From the most recent “Gender Equality Report” concerning the 6th Framework Programme (FP6) (published in October 2009), it is clear that setting the 40% target at the start of the 5th Framework Programme (FP5) had a positive impact regarding the number of women involved in FP5, and in most cases an even more positive impact on FP6. The percentage of women has steadily increased since 1999, and the objective of having close to equal representation of female and male experts and researchers in Framework Programme funded projects has been partially met. On one hand, FP6 expert groups, Monitoring Panels and Evaluation Panels were close to or reached the 40% target. On the other hand, the 40% target has not been reached everywhere, by all programmes or groups. And this is a major weakness. In the 7th Framework Programme (FP7), the target is still in place for all panels and groups.

Considering the still low number of women working in some scientific fields, the creation of new targets, adapted to the specific situation of each scientific field, could be considered. This would mean having more motivating targets – both in areas with many women researchers and in areas with few women researchers. In areas such as Social

292 COM(1999) 76 Final of 17.02.1999

293 For the documents mentioning the 40% target, see COM(1999) 76; 1999/C 201/01; SEC 2005 370; Council Conclusions on Family-Friendly Scientific Careers, 2871st Competitiveness (Internal Market, Industry and Research) Council meeting Brussels, 29 and 30 May 2008



Sciences and Humanities, Biotechnology and Agricultural Research, and Health, the Commission could now aim at equity (50% target), while in other areas where the number of women is considerably lower, e.g. Space and Aeronautics, the 40% target should be kept in place or even reduced.

The “Gender Equality Report” indicates also that the 40% target is far from being reached, on some boards where Member States (MS) nominate their representatives. The Commission has no power in these cases since nominations come directly from the MS. Perhaps the Commission should introduce a new condition – that boards must be gender balanced. This would mean that each MS proposes two nominations for each expert position – a woman and a man, and it is then up to the Commission to decide which of the two will be invited to attend the meetings, in order to ensure reasonable gender balance.

25% target for women in leading positions in public research, and gender pay-gap

In 2005 the European Commission proposed, and the Competitiveness Council adopted, a text that invited the Member States (MS) to “formulate ambitious targets for the participation of women focusing on areas where women are seriously under-represented, and in particular increase significantly the number of women in leading positions, with the aim of reaching, as a first

step, the goal of 25% in the public sector as an average in the EU, as well as boost their participation in industrial research and technology”. The fact that the Council endorsed such a target is indeed a success, but the lack of a clear deadline for reaching this target is a major weakness, as is the fact that no monitoring was established and there was no obligation to report progress towards the target. In 2008, Commissioner Potočnik sent a reminder to all MS asking to be updated on progress in this field, but not all replied and few were able to report on activities implemented to reach the target. Should the political climate permit it, the Council should revamp the target with a deadline.

At the same time, the gap between the salary of men and women researchers doing the same job (gender pay-gap) is a major problem for “women in science”, but this is an issue for the MS. The Commission can only continue to raise awareness on the issue, as it did with a campaign launched in 2009.

“Women in Science” projects in the Framework Programme

Having actions specifically in the field of “women in science”, the 6th Framework Programme was a major achievement since this was the first time that gender activities could use a specially designated budget.

A number of specialty networks in “women in science” (regional, thematic) have been created under the Framework Programme, but the major achievement was the creation of the European Platform of Women Scientists (EPWS): a EU-wide network involving more than a hundred associations of women scientists. However, since the Framework Programme does not permit the funding of the running costs for legal entities managing a project, and since the EPWS was unable to find alternate funding, the Platform could not continue to exist as a separate entity. The range of activities has therefore been reduced to what can be done on a voluntary basis, which means that the impact of the EPWS is much reduced and the Platform is in danger of fading away. In such a situation, financial support by the Member States would be much welcomed, at least until the Platform becomes self-sufficient.

As regards mentoring schemes and activities encouraging role models for “women in science”, the result has been a number of successful projects. These schemes, however, need to be better disseminated at national level in order to promote the interest of young girls in science and technology careers, and also to retain women already in science careers. But this national dissemination cannot be funded at EU level: the Commission through its Framework Programme funding has demonstrated the

feasibility and efficacy of these schemes, but it is up to national authorities to continue promoting this effort.

There has been little done in the Framework Programme to analyse, from a gender point of view, the concept of “excellence” in research, especially because of the difficulty of defining scientific excellence and identifying a way of measuring this. After Wennerås and Wold demonstrated that excellence evaluation in the medical sector in Sweden suffers from gender discrimination (Nature 387, 1997), the need for transparency in the recruitment and promotion rules and procedures for science and technology careers became clear. The European Commission proposed a Code of Conduct for the employers of researchers (2005), where the Member States and their research institutions were invited to promote transparency and fairness in researcher careers but this Code was not compulsory.

There has also been limited project activity to demonstrate how the gender dimension of research content could increase scientific excellence in research methodology and output – for two main reasons: the difficulty of defining gendered excellence in science and the strenuous opposition of the scientific community itself, which defends the (supposedly) absolute neutrality of science. Some examples to demonstrate that a gendered research could produce better results than a gender-blind research are



nevertheless available. The initiative of the Fraunhofer Gesellschaft called “Discover Gender”, launched following the example of the “Gender Action Plan” imposed in the 6th Framework Programme, demonstrated that new research, and consequently more knowledge and more funding, could result from the gender analysis of ongoing research. In this project, gender issues were taken into account from the start of the research planning and during its design, and used as one of the variables that needed to be considered, but could finally be excluded if shown to have no influence. This complex issue deserves more thought, and considerably more research, before any further conclusions could be drawn.

Another field that has been barely mentioned during the ten years of “women in science” activities is “gender budgeting”. Although studies and pilot implementation phases are ongoing inside the European Commission (in Directorates such as External Cooperation and Budget), there has been nothing done in DG Research itself or its possible application in research institutions. Since it is a complex and quite controversial topic, more reflection is needed before any further steps are taken.

Thanks also to EU activities, the question of gender has entered into science education debates at EU level. Activities promoted by the European Commission have created an important link between gender and how

science is taught – especially to girls – and how this influences their results in science and mathematics study. Much still needs to be done in this area, especially to eradicate stereotypes in school programmes – and further activities could include setting up working groups with experts and decision-makers in the field of school education. Projects have recently been funded that analyse why so few girls choose scientific and technological careers, and what higher education institutions could do to reverse this situation. Already available results suggest a number of ways to encourage more girls to take up science study, but these can only be implemented by national authorities. The Commission can only draw attention of the Member States to the best solutions and recommend their use.

A main criticism made by experts and evaluators to the European Commission is the lack of long-term sustainability for the EU-funded projects – i.e. that the Commission does not properly utilise the results of the projects, and that the funded initiative disappears as soon as the EU grant is totally expended, leaving behind nothing useful. The Commission has no real means for fighting this: it expects that there is self-motivation at the time of the proposal’s submission, but sustainability can be declared as one of the objectives of the project and then not be pursued, or pursued but not achieved. Often the project’s impact is limited to a particular region, or to the

women participating in the activity (training, mentoring, networking, etc), and no major change has been undergone by the time the project itself ends.

This is why the European Commission changed its focus in the 7th Framework Programme, no longer targeting the women in science but the research institutions themselves. If institutions change for the better, all researchers working for them (also in the future) will benefit – both the women and the men. Universities and research centres are being encouraged to modernise their own human resources management and to function from a “gendered” point of view. This process has just started but cannot continue for long: the Commission will fund some pilot projects, just to test the efficacy and efficiency of this option, and will then let the national authorities continue the process. This is also why a better cooperation with social partners will be pursued. Since the US National Science Foundation has lengthy experience with its similar “Advance” programme, close cooperation with them would be useful in order to learn from their experience and avoid the same mistakes. In addition, the Commission could provide support tools for specific training on gender and diversity management for managers of research institutions.

As regards awareness-raising, the initiatives promoted by the EU in the field of “women in science” can be considered to have been

quite successful, since the topic has become a policy issue that is discussed by Member State representatives and not only by gender experts in their own forums. The information has reached a large proportion of directly interested people, such as women scientists and their representatives, but has involved the public less directly. The awareness-raising effort has been major, but it cannot be considered to be sufficient. On the one hand, the 40% target for each sex on all boards, expert groups, panels etc that was fixed by the European Commission for its own system has been adopted by many at national level since it has been recognised as an appropriate goal – even if it is not yet fully followed or achieved. Much, however, remains to be done. Women scientists are the first not to be aware of the problem they might incur in the course of their careers, followed by the majority of their male colleagues and bosses. This “ignorance” usually lasts until a private life event turns the theory into practice: a promotion is refused because a child is born, a career is interrupted because a woman’s partner has to move. Debate about this unfair system must be encouraged, especially among men/policy-makers, on the frequent (and hopefully) unconscious discrimination that women scientists still face during their careers.

As already mentioned, one major criticism regarding EU activity in the field of “women in science” has been that the results of the



funded projects have hardly been visible, and rarely followed up. This is a major omission in the “women in science” activities, worsened by the fact that a specific impact assessment of the funded activities has never been requested, nor has there been a cost/benefit analysis of the invested resources.

As far as information dissemination is concerned, what should be done in the future is easy to define, but rather more difficult to realise. Firstly, a systematic organisation of dissemination of project results is needed. DG Research’s Cordis website already offers something along these lines: a Project Information & Dissemination Service (PIDS²⁹⁴) to collect the results of 6th Framework Programme projects. But PIDS is only a repository, and depends on the willingness of coordinators to actually upload their results once the project is finished. A proper database of funded activities and projects should be created, and made available online, which stores data, project results and information on the projects, etc, while the projects are ongoing (but taking into careful consideration the legal aspects of this dissemination, since the results are owned by the legal entities carrying out the project).

As far as impact assessment is concerned, this has generally been done only on the

participation aspects of “women in science” – i.e. how many women work in science and technology. The statistics demonstrate that an improvement has occurred in the last 10 years, even if this has been very gradual. There has been no attempt to measure the progress made as regards the scientific community’s openness towards integrating gender issues into their research or the community’s awareness of gender issues since these are influenced by so many social and cultural aspects.

There has been some protest because the European Commission has not continued funding specific activities as it did in the 6th Framework Programme. It must be noted, however, that Framework Programme Support Actions are funded to support research and policies, to provide examples and to test at EU level pilot phases of initiatives that will be beneficial because of their European dimension. Once their merit is proven, sustainability must be guaranteed by public or private funding, not by the Commission. What the Commission could do, however, is to open joint or coordinated calls in the 7th Framework Programme to fund specific gender-related activities and debates in specific scientific fields (such as gender, and women, in aerospace research, or research on health, climate change, nutrition, innovation...).

But how should the omission regarding the cost / benefit analysis be addressed? One

294 <http://cordis.europa.eu/pids/>

option is a service contract to measure the impact of the various projects in their specific fields some years after their conclusion, asking questions such as: What happened to each project? Have the obtained results been useful elsewhere? If the project involved research, how many articles have been published on the research, and how many citations has the research received? How many women benefited from the mentoring/training schemes? This topic, however, needs further discussion before any decision is taken.

4. Mainstreaming gender

Gender mainstreaming at EU level

Equality between women and men is a fundamental right and a common principle of the European Union. When the European Community was established in the 1950s, interpretation of the concept of equal opportunities focused on the principle of equal remuneration. Since 1996 – following the United Nations' World Conference on Women in Beijing 1995 – the launch of gender mainstreaming for integrating gender into all major European policy areas has formed the strategic approach to the question of equal opportunities between women and men for the European Commission. This policy is to be implemented in all institutions, policies, programmes and practices of the European Union.

The approach towards gender mainstreaming was first set out in the Commission Communication (1996) "Incorporating equal opportunities for women and men into all Community policies and activities²⁹⁵", which aims at more efficient action on equal opportunities together with simultaneously improving the quality of European policies. The follow-up report identified progress made and shortcomings remaining, such as lack of awareness of gender issues at decision-making levels, lack of human and budgetary resources allocated and lack of gender expertise. The European Commission's "Framework Strategy for equality between women and men²⁹⁶" covered the period 2000-2005 and embraced all Community policies and actions aimed at achieving gender equality, including gender mainstreaming policies and specific actions aimed at women. The fields of intervention concern economic life (gender segregation and gaps), equal participation and representation, social rights, civil life, gender roles and stereotypes. The 2006-2010 "Roadmap for equality between women and men²⁹⁷" followed, as tool to monitor and measure the mainstreaming of gender in all EU policies.

In DG Research, the first action for mainstreaming gender in research policy

295 COM (1996) 67 final

296 COM (2000) 335 final

297 COM (2006) 92 final



was the creation of a task force essentially dedicated to this objective. A “women and science” sector was then created in 1999, soon becoming a unit with 12 people dedicated to this issue. The unit was later charged with other objectives and – despite the fact that the staff was increased to 23 people – there are now only five working on gender, and not exclusively. The activities promoted by the “women in science” unit are well-known among gender experts and equal opportunity policy-makers, but not in the scientific community, amongst research decision-makers or the public at large. This unit chairs a “women in science” inter-service working group in DG Research, which is composed of representatives from all the specific directorates in the DG, and also from the other DGs that are involved in research (Information and Communication Society, Transport, Energy, Enterprise, Joint Research Centre). The role of this working group is to assist the chairing unit in monitoring how well gender is mainstreamed in research, but its current level of activity is modest, and steps should be taken to make the work of the group more effective and visible, and to ensure that it receives more support from management.

The Gender Impact Assessment studies carried out on the 5th Framework Programme for Research and Technological Development (RTD FP5, 1998-2002) showed that although there was a clear commitment to gender mainstreaming within the Commission at a

political level, there seemed to be no clear strategy on how to put this into practice in FP5 implementation. It was widely recognised that a transition to a both gender-balanced and a gender-sensitive organisation was needed to promote gender integration into research. The DG Research staff responsible for FP5 should have had a better understanding of the Commission’s gender mainstreaming policy, with senior management guiding and encouraging the need to translate policy into practice. Training was required to increase staff capacity and competence of gender issues, including why such issues are important elements of Community research and how gender-relevant research could be promoted by the Programme. Responsibility for the implementation of a gender mainstreaming policy should have been clarified. Gender mainstreaming officials, who ensure a coherent link between the strategy of the Women and Science Unit and staff involved in the FP5 implementation, should have been identified at decision-making level. In this way, responsibility for gender mainstreaming would have been at management levels, and not only seen as being allocated to female staff with an interest in women’s issues. Officials responsible for FP5 management should have ensured that gender issues were included in the agenda for meetings where Work Programmes were discussed, and distributed information and guidelines regarding opportunities to incorporate a

gender dimension to the relevant Committees.

The Gender Monitoring Studies carried out on the 6th RTD Framework Programme (FP6) found differences in the application of agreed processes. Inconsistent interpretations resulted in unequal treatment of proposals and projects, in part due to a lack of understanding and/or capacity on the part of the actors involved (evaluators, European Commission moderators and negotiators). For instance, it should not have been possible that proposals for which a Gender Action Plan (GAP) was mandatory (all Networks of Excellence and Integrated Projects), but which did not contain one, were eligible for and even passed the evaluation stage. But this did happen. A “Vademecum” for GAPs was produced by the Women and Science Unit, and it was generally well received by applicants and European Commission project officers, but more was needed to increase their capacity to deal with the implementation of a gendered approach in projects. Apart from training, applicants and Commission project officers would have found it very helpful to have more ad-hoc support for specific questions they might have had on gender issues in specific projects. Overall, the roles and responsibilities for integrating gender should have been more clearly defined for all actors involved in FP6, as the lack of ownership for promoting gender equality made it hard to meet gender-related

objectives. Several FP6 bodies and projects expressed the need for access to gender experts who could have provided more direct support on how gender could be integrated in the projects at a practical level.

Future actions on mainstreaming gender should move away from broad guidelines, and focus on implementable actions within specific scientific areas. In future, more Commission staff should be dedicated to the mainstreaming of gender in the research policy, not only centrally in the unit dedicated to this objective, but also in the various directorates themselves. It is just not possible for one person – usually each directorate’s representative in the Women in Science working group – to deal with the gender mainstreaming of a complete scientific field, whether it be nanotechnology, health or transport. In addition, new tools should be provided for the members of the DG Research inter-service working group to implement gender mainstreaming in the Framework Programmes, such as the possibilities of contributing to the working group that decides on evaluation and negotiation procedures and rules, advising on the work programmes, call texts, guidelines, etc.

In order to supply Commission staff working in the research field (project officers, negotiators, those responsible for work programme definition) with the basic knowledge to deal with gender



mainstreaming in their specific scientific fields, “gender training” is being planned at central level by DG Research. The trainers themselves will also undergo the training so that they will become aware of the gender issues implicit in assumptions like “excellent” research, or in procedures, such as the identification and selection of expert evaluators.

Gender mainstreaming at Member State level

There is a great variety in the level and depth of gender mainstreaming at national level – ranging from merely legislative support for the principle of gender mainstreaming to the actual implementation of practical measures. Two analyses have been produced by the European Commission on the efforts and results in the Member States regarding gender mainstreaming in research. The most recent analysis, published in 2008²⁹⁸, showed that women are better represented in countries where the salaries of researchers are relatively low and the national systems of innovation less developed. As these countries become more innovative, and improve their science and technology infrastructures, it is likely, says the report, that researcher salaries will increase and, if current patterns are replicated, this may serve to decrease the share of women

amongst R&D personnel. This study therefore suggests a need to implement measures and policies to counteract any potential future decline of women’s participation in research in countries with less-developed systems of innovation.

The report also highlighted the need for more comprehensive data from each country – stating that causality links are difficult to establish without time-series data. Having information on the year of implementation for each policy measure relating to women in science in each country would allow the determination of any correlation between the introduction of these policies and the proportion, and level, of women in science over time, and also the ways in which these policies impact conjointly, in the years following their introduction. The report noted that some of the policies or measures showed no correlation with the proportion of women in science. Since the study focused on national policies and strategies, it could be that the types of measures that have more impact on women’s participation in science are to be found at a more local level of small-scale initiatives and contributors. This “benchmarking” report also indicated that the problem of women’s under-representation in science appears to be most acute in the business sector, where the lack of sex-disaggregated data is also the worst. Therefore, efforts should be made in that sector to gather more data, as preparation for taking more action. Moreover,

298 European Commission, “Benchmarking policy measures for gender equality in science” – 2008, Luxembourg: Office for Official Publications of the European Commission

existing measures such as quotas and targets are almost exclusively found in the government and higher education sectors. Consequently, it is recommended that such measures be implemented in the business and enterprise sector.

Gender mainstreaming in Member States with EU support

The statistical and policy analyses of the situation in the Member States (MS) indicate that one of the main factors hindering women's participation in science is the unequal gender division of labour related to housework and family care. In order to achieve equal participation of women and men in science, fundamental professional-private life balance solutions, especially for dual-career couples and single parents, need to be implemented.

Analysis by the European Commission has provided the basic knowledge on this topic, but what is missing in legislation regarding professional- private life balance must be provided by the MS. The Commission encourages the MS via the "European partnership for researchers"²⁹⁹: MS are invited to implement initiatives at national level to improve the working conditions and mobility of researchers and – indirectly – to increase the participation of female researchers. Since an assessment of the implementation of these initiatives is

foreseen, the Commission can only hope that the MS will take gender into account in their National Action Plans.

Gender mainstreaming in the Framework Programmes

There is no mention of the need to increase the participation of women in science or to integrate sex differences and the gender dimension in research in the text of the **4th Framework Programme**.

The situation was completely different in the **5th Framework Programme** (FP5) where a dynamic and evolving system, known as the "Gender Watch System", was developed in order to monitor the 40% target for the representation of women in panels and advisory groups, to collect sex-disaggregated data, to encourage gender research within the Framework Programmes, as well as to monitor the situation and indicate which measures to develop further.

Consequently, seven studies were carried out as part of a "Gender Impact Assessment" (GIA) exercise, which analysed how the gender issue was handled in FP5, in particular looking at documents from the launching decision to the work programme drafting and beyond. The studies found that neither statements encouraging women to be involved in proposal submission, nor the standard statement "applications from female scientists will be encouraged" with regard to grants, were sufficient to encourage

299 http://ec.europa.eu/euraxess/index_en.cfm?1=19&l2=0&l3=0



women's participation in FP5 or the integration of gender issues in proposals. The proposal preparation material did make clear reference to the importance of encouraging the participation of women, but did not concern itself with the integration of the gender dimension in research content, and therefore lacked a fully integrated gender mainstreaming approach. The Guide for Evaluators contained no mention of gender or equal opportunities, nor did the other documents presenting the evaluation criteria. The GIA recommended revising the proposal preparation material to help integrate gender systematically throughout the Programme and to make more explicit the importance placed on gender issues. Guidance should be provided, said the report, not just on equal opportunities and gender equality, but on the integration of gender issues within research and how to put this into practice.

Apart from an increased participation of women as expert evaluators, the GIA also recommended that sex differences and the gender dimension be included as an evaluation criterion, thereby guiding the applicants towards including gender in their research. Evaluators were to consider the extent to which gender is covered, both from the women's participation point of view and the inclusion of gender in the scientific content and the methodology. In addition, some studies proposed rewarding proposals for meeting gender equality objectives, such as by awarding marks to those proposals

with gender-balanced teams and/or with a female co-ordinator, provided that the scientific and technical quality of the proposals were ensured. The GIA report referred to the need that evaluation panels be gender sensitive and recommended briefing the members on EU gender policies and on the integration of the gender dimension in research. There was also a need for gender expertise relating to the thematic areas in evaluation panels, and a manual on how to assess the gender dimension of proposals. It was suggested that the Commission's expert database be modified to allow the recording of applicants' gender expertise and other cross-cutting competencies such as environmental knowledge, while the application form for expert evaluators should ask applicants to indicate such knowledge.

A number of specific steps were taken to reply to these recommendations and improve gender mainstreaming in the **6th RTD Framework Programme** (FP6, 2003-2006). The 40% target (now changed to 40% of the under-represented sex) was expanded to all groups, panels and committees associated with the Framework Programme; tools were introduced (the SESAM workforce questionnaires) to better collect sex-disaggregated data in all areas of FP6; and Gender Action Plans were introduced for the new instruments in FP6, namely Integrated Projects and Networks of Excellence. Six Gender Monitoring Studies (GMS) were

carried out on FP6 results, each study analysing, in a specific research area, the participation of women and the integration of the gender dimension in the research content. In addition, the studies were also to check if and to what extent the GIA recommendations had been taken into account. From the female participation point of view, the studies found some progress, with more women carrying out research and being represented in FP6 bodies. However, women tended to be better represented in less senior roles.

The studies found that the recommended revision of the proposal material had been done, with a better inclusion of gender references in guidance documentation. The Guide for Proposers for all instruments required that proposals clearly indicate the way in which any relevant gender issues were taken into account (Part B of proposals), while also clearly mentioning that project management may include a task to oversee the promotion of gender equality (Part A). For Networks of Excellence and Integrated Projects, proposals were required to include a Gender Action Plan (GAP), indicating actions and activities to promote gender related aspects within the project. Nevertheless, the guidance documents needed to be improved: the distinction between the gender dimension in research content, and the participation aspect of gender equality, should have been made clearer.

The GMS found that only some of the Thematic Work Programmes analysed emphasised the gender dimension of the eligible research topics, a crucial aspect to ensuring a gender consideration in proposals. They found that while gender was mentioned in the documents made available to proposers, the guidance was not always sufficiently specific or practical. Positive examples of course existed: the Guide to Proposers, under the Science and Society priority, for example, contained a one-page annex that clearly explained the legal basis of gender equality, the relationship between women and research, and provided concrete examples on how gender-specific needs were relevant in research.

The studies demonstrated that in some research areas there were references to gender in guiding documents such as the Work Programmes, Calls and Guidelines for proposers, but these references focused primarily on achieving a numerical balance of women and men, and did not provide any real guidance on how to integrate gender in research. Furthermore, it was found that the administrative aspects tended to lower the profile of gender. Gender issues were included in the proposals forms and evaluation documents, but covered under the “Other Issues” section, and the wording suggested that gender was not related to questions such as the quality of the proposed research, its relevance to the objectives defined in the research priorities, or to the



potential impact of the project or the project resources.

As recommended by FP5, evaluators were briefed by the Commission on how to consider gender related aspects. The Women and Science Unit prepared a presentation for the briefing sessions, but it was not used by the different thematic priorities that had very different emphases. Neither the integration of the gender dimension in the proposal, nor the gender balance of project teams, seemed to play a significant role in the evaluation process. The studies noted that on many occasions, gender was not considered during evaluation at all. This was not surprising given that gender assessment was not part of the formal evaluation criteria, leaving evaluators with little incentive to take it into consideration. In addition, evaluators were not always well equipped to deal with gender. Reviews of proposal evaluations indicated that the assessment of gender by the evaluators was not systematic and consistent. Capacity building for evaluating the gender dimension of proposals was therefore recommended. This could be achieved through training or through the use of evaluators with gender expertise.

In FP6, it was also found that contract negotiations could have had the potential to positively influence the integration of gender into projects. However, the impression arising from the studies was that there was

often a lack of awareness and understanding amongst Commission Project Officers about gender in the negotiation and follow-up phases. The findings from the fieldwork carried out by the GMS indicated that there was potential for a mismatch between the actions planned by the projects at the proposal and negotiation stages and the actual implementation of the actions. There was frequently no follow up on reporting about the implementation of the plans on gender equality. In general the studies noted that minimal attention was given to reporting on this issue, highlighting the impossibility of collecting reliable data or monitoring the implementation of measures. Systematic evaluation of the research impact of those projects that had taken the gender dimension into account could have helped demonstrate in concrete terms how doing so could contribute to scientific and research excellence.

The Gender Monitoring Studies (GMS) concluded with several recommendations to the Commission for the next Framework Programme, but these recommendations came too late: they were published after the launch of the 7th Framework Programme. The studies found that including references to gender in guidance and documentation certainly contributed to raising awareness about gender in FP6, but the guidance was not applied consistently and more needed to be done to make it more consistent, coherent and useful. Few actors involved in FP6

thought that the promotion of gender was within their area of responsibility so this needed to be addressed. The definitions for gender issues needed further clarification in all documentation, especially with respect to the gender dimension in the content of the research. A distinction needed to be made between this and female participation. The GMS suggested that further developing the role of the National Contact Points in promoting the integration of gender in projects could be a significant source of support to the project applicants. The studies concluded that elevating gender aspects to the status of formal evaluation criteria would guarantee that gender was better addressed by both the proposal applicants and the evaluators. Capacity building for evaluating the gender dimension of proposals was also suggested, as in the FP5 assessment. If gender assessment actually had an impact on the final score, both project applicants and evaluators would have stronger incentives to consider it more carefully.

As part of the simplification effort decided in the preparation phase of the **7th RTD Framework Programme** (FP7), all horizontal issues (including gender) were removed from the proposal and evaluation phases to be dealt with exclusively in the contract phase (i.e. during negotiation). This decision was supported by the majority of the scientific community, who had not been happy about the obligation to tackle gender

in their specific fields of research, and by the majority of evaluators, who had complained about the obligation to evaluate criteria for which they had no specific expertise (gender, socio-economic impact, etc). Internal working groups were created to deal with the various aspects of FP7, and the ad-hoc group dealing with gender acknowledged the need for high quality data collection and for specific action on gender issues. Its members acknowledged that specific work programmes should raise awareness on gender issues, and gender aspects should be integrated wherever relevant. It was felt, however, that the approach generally taken in FP6 to collect such gender information on a project per project basis was cumbersome, in particular for the contractors, and that the exploitation and use of this information was less than optimal. The working group proposed that for FP7, the gender issues, and data collection on gender, should be increasingly addressed through specific horizontal activities and specific thematic studies and projects (e.g. through specific calls in the work programmes and possibly also via calls for tenders), and not on a project per project basis.

Therefore, from an operational point of view, and with the aim of simplification, it was proposed that: gender action plans should not be mandatory for Collaborative Research projects and Networks of Excellence at proposal stage; no specific criterion on gender should appear in the evaluation



criteria; at the negotiation level the importance of gender issue should be emphasised but no specific gender action plan, nor specific gender budget allocation, will be expected (i.e. no Gender Action Plan in the Technical Annex). Nevertheless, the consortium would need to report on gender issues at the final report stage, and in order to allow a reliable collection of data for statistical reasons (even if it is minimal), the proposal submission forms and grant agreement preparation forms should record the sex distribution. A questionnaire and/or a report template would need to be prepared to assist the projects in this reporting and to optimise the content in view of the specific needs of the Commission.

This change of direction transmitted the message that the European Commission was less committed to promoting equal opportunities in FP7 than it was in FP6. Removing gender from the evaluation phase signalled a step backwards in terms of gender mainstreaming. A more constructive approach would have been to recognise that the appraisal of gender issues needed to be presented in a more positive way to evaluators, and that clearer instructions were required during the evaluation process.

Analysis of the work programmes published from 2007 to 2010 in the various Specific Programmes shows a drastic reduction in the presence of gender-related aspects in setting research priorities, despite the

recommendations given at the beginning of FP7.

During this current period of FP7 mid-term assessment (results expected by the end of 2010), it must be admitted that it will be very difficult to monitor gender aspects – participation of women in science, or the gender dimension in research – in FP7-funded projects. No tools have been foreseen for this, and no data have been collected by the various directorates. With some effort, gender could be reintroduced during the two last years of FP7 programming, perhaps with some specific calls on gender in selected thematic priorities.

A totally new strategy needs to be put in place for the next programming period of research activities, building on the recommendations given at the end of the 5th and the 6th Framework Programmes, which are still, sad to say, completely relevant.

Mainstreaming gender in research content

If we look at the progress of the integration of gender in research content throughout the Framework Programmes, we can summarise it as: from a modest start to a strong thrust, followed by an unexpected complete stop.

The Gender Impact Assessment (GIA) studies showed that sex differences and the

gender dimension were not integrated into the specific programmes nor were they among the evaluation criteria and procedures, so very limited attention was paid to gender issues in **5th Framework Programme** (FP5) projects. The Work Programme was recognised as being central in determining whether or not sex differences and the gender dimension were to be taken into account in the implementation of the programme. But experience showed that even when Work Programmes made full reference to gender, a process of “evaporation” occurred at the implementation stage. This “evaporation” was also noted between the time of the project proposal and the actual project implementation. The GIA recommended that organisational structures for gender mainstreaming be established and/or enhanced with clear mandates for overseeing and monitoring policy implementation. This was the key for building institutionalised gender competence and could have helped to tackle the problem of such “evaporation” of gender.

The GIA identified two elements that should have broadened the research horizon of FP5 projects to allow the introduction of gender aspects: multi-disciplinarity and multi-sectoral activities described in the general documents of FP5 (Annex II to the Council Decision 182/1999/EC). The first – multi-disciplinarity – should have allowed the integration of socio-economic dimensions in

research and thus provide an entry-point for gender aspects. The second – multi-sectoral activities – related to the involvement of a variety of actors from different sectors in research activities, gender experts hopefully included.

It was recommended that institutional procedures be defined for monitoring implementation of the gender mainstreaming policy within each research area of the Framework Programme. One specific suggestion was that proposers systematically supply information concerning the intended and actual participation of women and men in project activities. It was recommended that completed projects should be monitored against quantitative objectives to promote the equal participation of women and men, and qualitative objectives to integrate sex differences and the gender dimension in the content of research and the research methodology. While one suggestion was to establish specific gender panels of independent experts to ensure that gender aspects were systematically included in the monitoring of programme and project implementation, there was concern that this might introduce an unnecessary additional layer in Programme procedures.

The socio-economic approach of research was considered a precondition for the integration of the gender perspective, apart from in the Quality of Life Programme where biological sex differences can call for a



natural science approach. It was recommended that the socio-economic dimension of research be enhanced in the new Framework Programme. In addition, research design should allow the identification of diverse human populations to be studied, and research methodology should include socio-economic analysis methods in order to integrate the gender dimension. It was suggested that projects with a gender dimension could be clustered at Action Line, Key Action or Programme level to encourage the networking of women involved in the implementation of these projects. This recommendation was particularly valuable in those areas where there are few women working in the field, such as energy research.

The main outcome of the analysis was that the gender dimension was not being integrated in proposals. Results were similarly disappointing when the studies limited their assessment to proposals with a clear socio-economic dimension; the majority ignored the gender dimension although it appeared relevant for the research topic.

Gender Action Plans (GAPs) were introduced in the **6th Framework Programme** (FP6) as part of the new funding instruments, Integrated Projects (IPs) and Networks of Excellence (NoEs). These funding instruments were orders of magnitude bigger in both scale and budget than any previous

research funding instrument and the projects using these instruments were required to develop a gender action plan. The analyses carried out by the Gender Monitoring Studies on FP6 indicated that the GAPs were a useful tool for raising awareness about the importance of gender equality in science and to some extent influenced the degree to which gender was integrated into the projects. Through the GAPs, IPs and NoEs generally provided concrete actions and described these in a structured way. However, the same studies also noted that GAPs influenced the number of measures planned by the project but not necessarily their type or quality. The impact of GAPs on the integration of gender into the projects was hampered by the fact that they were not consistently of a high quality. The composition of the GAPs was found to be confusing by many project participants and this took away from their usefulness. The quality of the submitted GAPs was quite variable. Only an estimated 15-25% of the GAPs that were analysed in the GMS were regarded as very good or excellent. Most of the planned actions related to increasing the participation of women, while the sex and gender aspects of the research content were rarely included. The contribution of gender considerations to overall scientific excellence was also neglected.

The fact that GAPs were not scored during evaluation reduced incentives on the part of the projects to create robust and meaningful

gender action plans and on the part of evaluators to take the assessment of the GAPs seriously. The studies indicated that evaluators viewed GAPs as a stand-alone dimension of Integrated Projects and Networks of Excellence rather than an integral part of them and that they were not given the required attention during the evaluation phase. This was further supported by the examples of IP and NoE projects in which GAPs were not submitted at all, although they were mandatory for these particular instruments. Projects rarely assigned budgets to GAPs and without financial commitments in situ, the likelihood of implementing planned gender related actions was reduced. Moreover, no reliable indicators existed that could have helped assess the implementation of the GAPs, as only a minority of projects provided GAP progress reports. In general, monitoring of the implementation of GAPs was found to be weak. Finally the quality of the GAPs depended on the gender awareness of participating partners and institutions: where gender was already well-integrated in organisational policy, gender was also taken on board more seriously in the projects.

Still, there were clear signs that GAPs had some positive effects on the integration of sex differences and the gender dimension in research, which would not have been realised without the efforts that were undertaken. The introduction of GAPs also encountered some unexpected gains for

gender equality beyond the Integrated Projects and Networks of Excellence: there were several proposals with well developed GAPs in instruments for which they were not a requirement.

Although the Commission developed Gender Action Plan Reporting Questionnaires to assist the process of monitoring and reporting on the GAPs, the software to implement the questionnaires did not work at the beginning of FP6 and there was little follow-up by project officers on collecting hard copies of the reports. The availability of the software would certainly have made the monitoring and reporting easier.

The GMS highlighted an overall tendency for projects to overlook the importance of addressing sex differences and gender to guarantee the validity of scientific results and to ensure that products and results met the needs of all population groups. The integration of the gender dimension into the content of the research was hampered by two key difficulties: firstly, the concept was not understood particularly well, and secondly, this lack of understanding meant that there were challenges in identifying the practical measures that could have been taken to address the gender aspects in the research. Projects had a tendency to interpret the gender dimension as primarily relating to biological differences between women and men, i.e. sex differences. The socio-cultural aspects of gender roles were



often neglected. Confining “gender” to physiological differences disregarded the social and cultural dimensions that condition differences in the roles of men and women, masking gender-specific needs. In addition, gender was often only assessed quantitatively (e.g. in interview samples) rather than in the qualitative aspects of research. This could potentially have affected the validity of scientific results and have skewed the possible impacts of research across population groups. The studies found that there was a general underlying lack of understanding of what addressing gender in the research content meant, and what were its practical implications. There were also some indications that it was assumed that the research topics were gender neutral and that there was no need for “special treatment” of women.

Despite the weaknesses identified in many GAPs, there was a consensus among the GMS that they should be retained in future Framework Programmes, albeit in a revised format. GAPs could have the potential to become a very effective tool if they were more rigorously evaluated and implemented – and made more user-friendly to both project holders and evaluators. As the inclusion of gender at proposal level was not a guarantee of an appropriate follow up at implementation level, GMS suggested a closer monitoring of project implementation in order to measure their commitments in gender. GMS also suggested that more

precise background information and guidance to all relevant actors on how the gender dimension should be integrated into each research area was essential. Gender-relevant issues should be identified and included in Work Programmes and Calls among the suggested research topics, wherever possible. The guidelines for proposals should demonstrate how the gender dimension could be addressed at all stages of the research, from the initial design to the assessment of the long term impacts of the results achieved through the project. As much of this information as possible should be included in all key information and training documentation for the Framework Programme.

It was also suggested that gender experts, knowledgeable in the respective scientific fields, be involved in the drafting of the Work Programmes. Including gender relevant questions in the criteria for the assessment of scientific excellence would also serve as a strong encouragement for the integration of gender in the content of research. This could include, for example, the clear identification and differentiation of the beneficiary populations, stakeholders and end-users of the research, on the basis of key socio-economic variables, including sex. Finally, in some areas it was recommended that links and learning be fostered between “good” projects and those exhibiting weaknesses in addressing gender, particularly with regard

to projects in similar domains of research and/or regions.

In the **7th Framework Programme**, as a result of the simplification exercise in DG Research, horizontal issues (including gender) were no longer subject to evaluation. Instead, they could be made a condition at contract negotiation stage. The reasons given for this decision were the reduction of the administrative burden at the proposal stage, and the fact that the evaluator surveys showed that many evaluators did not feel comfortable evaluating horizontal issues. The decision to remove the Gender Action Plans (GAPs) in FP7 was received negatively by groups and institutions involved in gender mainstreaming and also by some research institutions. Amongst the reasons for the criticism were that introducing a GAP at the contract negotiation stage was against the principles of gender mainstreaming, which requires a systematic consideration of gender aspects at all levels, and that if GAPs were not part of the proposal, a large proportion of researchers applying for FP funding would not give any thought at all to the gender dimension of their research or to gender equality. In addition, adding a GAP at the contract negotiation stage was likely to be difficult, as no budget would have been foreseen for such activities. Nevertheless, the inadequate functioning of the GAPs in FP6, and the complaints received by the Commission from those in the scientific community who did not feel prepared to deal

with gender issues in their research fields, convinced the Commission to remove the GAPs from FP7.

The participation of women in research, and the gender dimension of research, however, are mentioned in the major legislative basis for FP7 (Decision 1982/2006/EC ³⁰⁰): “Under the Seventh Framework Programme the role of women in science and research will be actively promoted by appropriate measures with a view to encouraging greater numbers to become involved in this domain and further enhancing their active role in research”, and in its Annex 1, defining the Cooperation programme where it is stated that “The integration of the gender dimension and gender equality will be addressed in all areas of research”. No specific tool for the integration of the gender dimension in research has been foreseen for FP7, and there is nothing mandatory foreseen regarding gender at proposal or project level. GAPs can be included in the proposals, of course, and a budget can be reserved for their implementation.

Looking to the future, a discussion on “gender in research” could be organised with current project managers in order to identify possible new instruments to replace the GAPs, or GAP follow-up sessions could be organised at EU scientific conferences (to be identified with the support of other DG

300 O.J. L 412/1 of 18 December 2006.



Research Directorates). A new method to collect information for monitoring gender in FP7 should be identified. The “gender training toolkit”, designed for training the research community on the gender dimension of their research, has almost completed its project task. This effort should be continued and expanded. We also need to re-think and re-propose the topic of “gender and excellence”: to define how the gender dimension of research content can increase the scientific excellence of the research methodology and its results.

As regards funding research on gender itself (i.e. pure research as opposed to research that is instrumental for policy), there are a number of areas which are yet to be explored, but which could produce useful results – e.g. examining the gender dimension in the wider context of “science in society” (implications for knowledge production, scenario development in conditions of a gender-equal society); developing knowledge on gender in specific thematic areas (such as health, environment, energy, security, space), in collaboration with the specific DG Research Directorates. Funding such “pure research” is now feasible, thanks to the Lisbon Treaty’s new provisions (December 2009). However, before any plans can be made, this potential new field of activity needs in-depth analysis and discussion.

European Commission

STOCKTAKING 10 years of “Women in Science” policy by the European Commission (1999-2009)

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Ten years ago the European Commission started its activities on “women in science”. This Report records this ten-year history, analyses the activities undertaken, provides an assessment of their effectiveness and appropriateness, and – whenever possible – includes a reflection on what did not work, what was not done, and how these omissions could be addressed. The authors believe that this report – a stocktaking of 10 years of activities on “women in science” – will help the European Commission to make decisions on future policy because of the perspective provided by the process of “taking stock”. And this report should also help future proposal presenters, providing them with the background to the topic, and the details of previously funded projects, thereby placing the Framework Programme calls into a policy development context.

