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Waste of talents: turning private struggles into a public issue

Women and Science in the Enwise countries



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Waste of talents: turning private struggles into a public issue

Women and Science in the Enwise countries

A report to the European Commission from
the Enwise Expert Group on women scientists
in the Central and Eastern European countries
and in the Baltic States.

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Executive Summary

- The Research Directorate-General commissioned this report in order to assess the conditions and status of women scientists in the Central and Eastern European countries and the Baltic States. Following the ETAN report on “*Science policies in the European Union - Promoting excellence through mainstreaming gender equality*”, which dealt essentially with the situation of women scientists in the current EU Member States, this report is the result of one of the actions of the *Science and Society Action Plan*: to promote gender equality in science in a wider Europe.
- The Enwise (Enlarge *Women In Science* to East) Expert Group was chaired by Professor Ene Ergma and its members are senior women scientists from different disciplines, representing academies of sciences, universities, research institutes and administration, as well as business.
- This report investigates the situation of women scientists in the Enwise countries, providing an insight into the situation from a historical, as well as a contemporary perspective. It makes recommendations to a series of stakeholders: the Commission, the European Parliament, the Enwise countries, as well as the current EU Member States and organisations that educate, fund and employ scientists.
- During pre-communist times, the position of women in these countries evolved in similar patterns to that in Western countries. However, the process was accelerated by political events, which led to the establishment of women’s suffrage rights, their representation in public administration and the co-education of children prior to that in Western Europe.
- The report highlights the influence of the specific gender policy implemented in these countries during the communist regime, characteristics of which included the equal right to and the obligation of full-time employment, as well as access to education regardless of gender. Furthermore, this policy was supplemented by the availability of childcare facilities, legal protection and state support for the working mother. However, this formal gender equality was achieved and sustained through political censorship, and the suppression of women’s movements and freedom of speech. In addition, the system perpetuated horizontal and vertical segregation in all areas of employment (including the higher education and research sectors).
- The report acknowledges the legacy of the communist gender policy. The importance of education, and access to it, has led to the emergence of a considerable proportion of highly-qualified women active in all public spheres and notably in science.

- The transition period has led to the restructuring of the research systems in the Enwise countries and can generally be characterised by the sharp decline in funding allocated to science, the decrease of the research population and the disappearance of the military and associated industries. Even though this change affected male and female scientists equally, the consequences of the transition have left women scientists in a more vulnerable situation.
- The prospects of young female scientists are very bleak due to the unavailability of funding, the rigid patterns of promotion and recognition, and the lack of appropriate welfare policies, all of which are potential causes of brain drain.
- Although there are higher proportions of women among researchers in the Enwise countries than there are among the current 15 Member States, a deeper analysis of the economic situation reveals that women tend to be better represented in the countries with the smallest research populations; that they have also constituted the majority of the highly-qualified workforce for a long time, and that there is therefore a greater likelihood that they will be employed in knowledge-intensive domains.
- However, demographics are not the only explanation. This report shows that even in the countries where the overall presence of women and men as researchers is fairly balanced, there are gender differences in the concentrations across the various R&D sectors and fields of science, whereby women are squeezed out of competitive, high-expenditure R&D systems, but absorbed into struggling low-expenditure systems as a kind of *back-up* human resource.
- This report also provides some powerful insights into the day-to-day working situations of women scientists in the Enwise countries. Women are still under-represented at the top positions in academies of sciences and in universities. Women constitute the majority of teaching staff (54%), but tend to be concentrated in the lower academic positions. Furthermore, despite the fact that women's participation among university staff is similar to their presence as researchers, men are three times more likely to reach senior academic positions than women.
- Scientists from the Enwise countries have been associated to the EU Research Framework Programmes since the beginning of the 1990s. Since the launch of the 5th, and even more so with the 6th Framework Programme, they have been considered as equal partners to their counterparts from the EU-15. However, despite the great interest in these activities on the part of women scientists, their skills are used essentially in support activities rather than in the monitoring of the Framework Programme or advisory work.

- Inadequate funding, poor infrastructure and outdated equipment in the Enwise countries are all factors that impede the development of research communities, especially in areas where the expenditure on R&D is low. As these areas tend to be those where a large proportion of female scientists are employed, women scientists face a higher risk of missing out on research opportunities. Therefore, the access to better infrastructure providing reliable, up-to-date information should be facilitated.
- The lack of consistent data on the distribution of men and women in science at all levels of the hierarchy, together with the lack of research on *women in science* issues in the Enwise countries are a key hindrance in gender mainstreaming. The availability of sex-disaggregated data and monitoring of the position of women in science at national level needs to be systematised in order to promote gender equality in all private and public research institutions of the Enwise countries.
- Finally, there is a need to build a consensus for further action to advance the agenda for women in science in the Enwise countries. This should involve the Commission, the European Parliament (in particular once new members from the Enwise countries have joined) and the Council, as well as politicians and organisations in the Enwise countries. A strong partnership is also required with the current EU Member States. Last but definitely not least, women scientists of the Enwise countries must play their part if they are to take their full place and role in the European Research Area.

Foreword

This report puts the *women and science* issue into a new perspective, that of a wider Europe.

At the eve of the most significant enlargement in the European integration history, women scientists from the Enwise¹ countries speak out in order to fully contribute to the European Research Area.

From 1 May 2004, new countries will join the European Union. In this context, it is important to take action to enhance further transformation of values and attitudes, both in the current and new Member States. The fact that EU research policy opened its programmes and activities as early as the beginning of the 1990s will, of course, help to smooth the way.

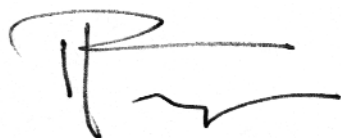
This report is an important contribution to this process. It reveals the large proportion of highly qualified women scientists who are currently working in the research institutions of the Enwise countries in very poor conditions, representing a real waste of talents for both their national scientific communities and the European Research Area.

Should the situation not be improved, there is the additional risk that these underutilised skills will have a negative impact on the younger generation and deter them from entering science, which is something that European research cannot afford...

The gender equality issue is a complex one. This report helps us to understand how it has been shaped in the Enwise countries. It shows that while formal legislation is an absolutely necessary condition, it is not sufficient to guarantee equality. The report also calls for changes in mentalities and in working conditions. Institutions have a role to play in supporting or encouraging these changes, by questioning norms, setting new standards, monitoring progress in order to allow women scientists to take full advantage of and contribute to the European Research Area.

I want to congratulate and thank the Enwise Expert Group, and in particular Ene Ergma, for this report. I will encourage a wide debate around it and examine its recommendations carefully. But gender equality in European scientific research will only become a reality, if action follows debate: may I invite each reader to reflect upon what she or he can do in this respect and then to take appropriate action!

1. The Enwise countries are Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.



Philippe Busquin
Commissioner for Research

Preface

In 1998 the European Commission's Research Directorate-General set up a first expert group on women in science. The resulting excellent ETAN report "*Science policies in the European Union - Promoting excellence through mainstreaming gender equality*" demonstrated clearly that "*the European Union should ensure that women scientists have an equal right to enjoy advantages that a scientific career can offer and to be involved in decision making on research priorities*".

On 1 May 2004, eight Enwise countries will become Member States of the European Union, whereas Bulgaria and Romania are meant to join in 2007. Are they ready to become members of the European Union? We are justified in answering *yes*, because they fulfilled all the requirements set by the EU. But are the citizens from our post-communist societies ready to accept and support any national policy promoting gender equality and gender mainstreaming?

During communist times, we used to think that we were formally equal, because women and men had been formally given the same rights. But was this really the case? Many scientists in our countries, myself included, had never thought about gender issues as a problem. It seems that we had buried this question at the very back of our minds.

After careful examination, however, we can see that in our countries we are facing similar problems as in the current EU Member States: men dominate the higher academic and research positions. But because of our specific history, at least one difference can be highlighted: if formal gender equality has been legally pronounced to comply with EU requirements, there is still a long way to go - with nuances from one country to another - until it will be implemented in practical terms. In our countries, legal changes in favour of gender equality are still often met with high resistance. In our male-dominated national parliaments, the resistance to gender equality is still stronger. Gender equality is sometimes even felt as discrimination against men!

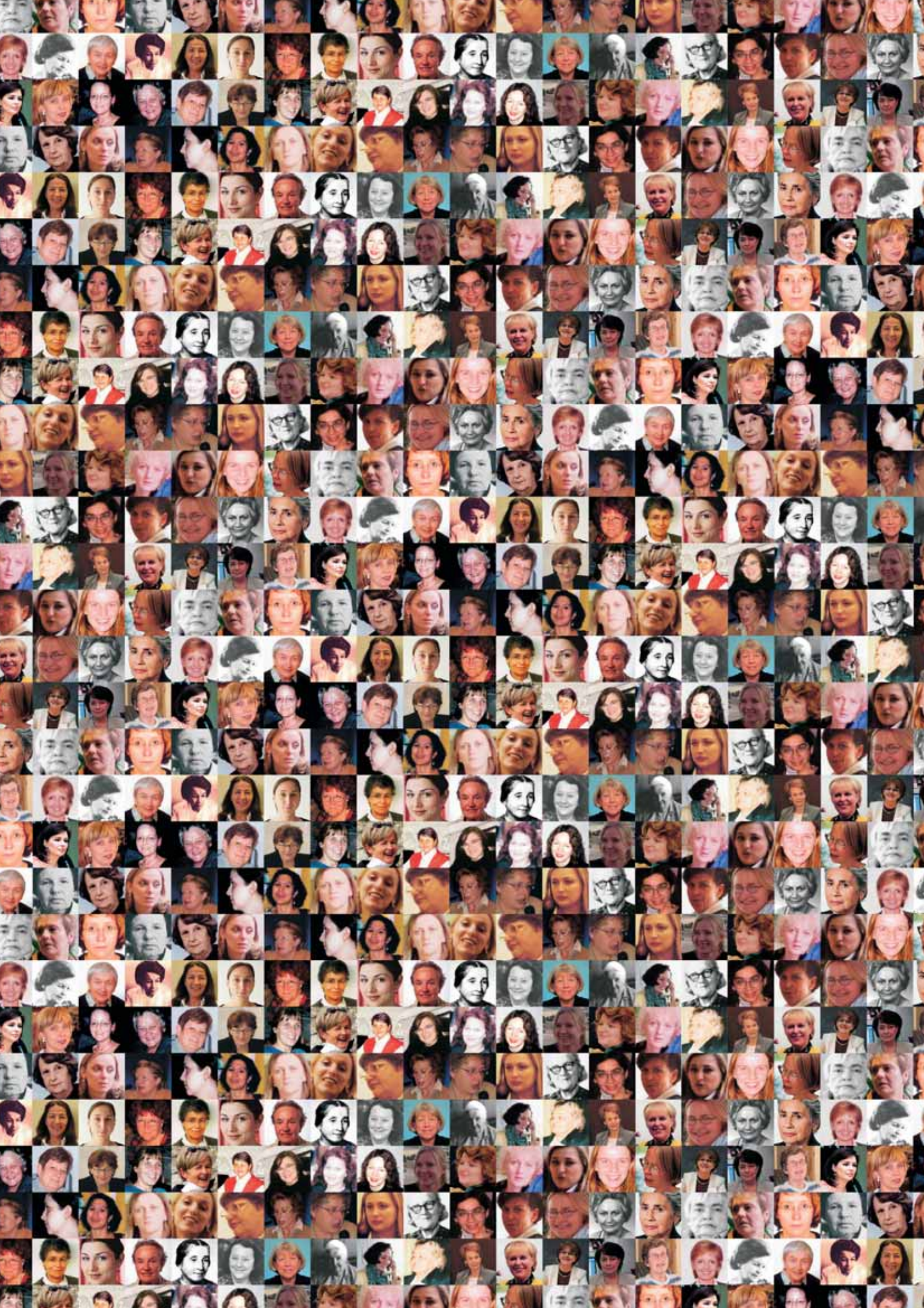
The recommendations put forward in the present report target several groups: the EU and its institutions, the Enwise countries' parliaments and policy-makers, their universities and research institutions, their media and civil societies as a whole, as well as women and men scientists themselves.

We hope that both the ETAN and the Enwise reports, together with the ongoing activities of the Helsinki Group on women and science, can inspire all the concerned stakeholders, in particular the Commission, the Council and the European Parliament, in finding the appropriate ways to support our common aim of including, promoting and encouraging the presence of more women at all levels in science in the current and new Member States. In order to build up a wider, more effective and efficient European Research Area and to ensure that the European Union becomes the most competitive knowledge-based society in the world by 2010, we need all available, female as well as male, brainpower to be involved in and committed to reaching these objectives.

Ene Ergma

Chairwoman of the Enwise Expert Group

We would like to especially acknowledge the work of Ms Brigitte Degen from DG Research in the preparation of the report. She has dedicated much of her time in helping the Expert Group - in fact she has shown dedication *well beyond the call of duty*, for which the Expert Group is very grateful.



If today there is an awareness of women and science as a political issue in the Enwise countries, it is fair to say that it is due, to a large extent, to the catalyst provided at the European Union (EU) level. Without the coordinating effect of the various networks, any women and science initiative in the Central and Eastern European countries (CEECs) or in the Baltic States would still be acting in isolation.

In the move towards enlargement, EU research programmes were one of the first domains to be opened¹ to the candidate countries. This process coincided with an initiative taken by the Commission to “*mobilise women scientists to enrich European research*” (European Commission, 1999), which took the form of an action plan, a main element of which was to set up a European level *policy forum*. The Helsinki Group² on Women and Science, composed of senior civil servants and/or gender experts from 32 countries, was thus established in November 1999 and included, from the outset, all CEECs and the Baltic States on an equal footing to the EU Member States, as well as all the other countries associated to the 5th Research Framework Programme.

One of the first tasks assigned to each Helsinki Group delegate was to produce a national report by the end of 2000, describing their respective national policy (if any) to promote women in science. Building upon the rich material of these national inputs, the European report “*National policies on women and science in Europe*” was published (European Commission, 2002). The national reports delivered by some of the CEECs made it clear that the findings and recommendations, put forward in the report “*Science policies in the European Union - Promoting excellence through mainstreaming gender equality*” (Osborn, 2000) by the ETAN Expert Group set up by the Commission in 1998, did not sufficiently reflect the situation facing women scientists from these countries and could not therefore serve usefully as a support in policy work. Indeed, the communist past, the transition towards a market economy and the controversial processes of democratisation had created a particular situation, different in many aspects from the ones in the European Union and in the other candidate countries.

1. See following Chapter 4.
2. A list of the Helsinki Group members from the Enwise countries can be found in Annex 10 of this report.

In 2001, in the wider context of moving towards the setting up of a European Research Area, where the role and place of women scientists had been strongly recognised, the Commission adopted its *Action Plan on Science and Society*. One of the actions “*Promoting gender equality in science in the wider Europe*” acknowledged the need to analyse the specific situation encountered by women scientists from the CEECs and the Baltic States.

In order to implement this action, the Commission established a group of independent experts in September 2002, known as the Enwise (Enlarge *Women In Science* to East) Expert Group, whose members are senior scientists from different disciplines, representing academies of sciences, universities, research institutes and administration, as well as business. Their mandate was to report on the situation facing women scientists in the following countries³: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia; to integrate the experience of the new German Eastern *Länder* and to give a perspective on the Balkan region. Their final objective was to make recommendations 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 the Framework Programme**.

Building upon national contributions delivered by the experts from the 10 Enwise countries and by the two experts for the new German *Länder* and the Balkan region, the Enwise final report represents the collective view of the members of the Expert Group and is the outcome of a shared endeavour to produce a common picture, while respecting the various *nuances* created by different historical and geo-political contexts. Different disciplinary expertise, cultural backgrounds and professional abilities have been pooled and shared during this empowering exercise. The title of the report “*Waste of talents: turning private struggles into a public issue*” highlights the long-standing perception throughout the Enwise countries, perpetuated and tolerated by the society at large, that the precondition of being a female scientist comes with the acceptance of an under-funded position in the scientific community, a *double burden* of maintaining a healthy work-life balance and the implicit expectation that all of these hindrances form part of the private sphere without any public recognition or remedy.

3. hereafter called the Enwise countries.

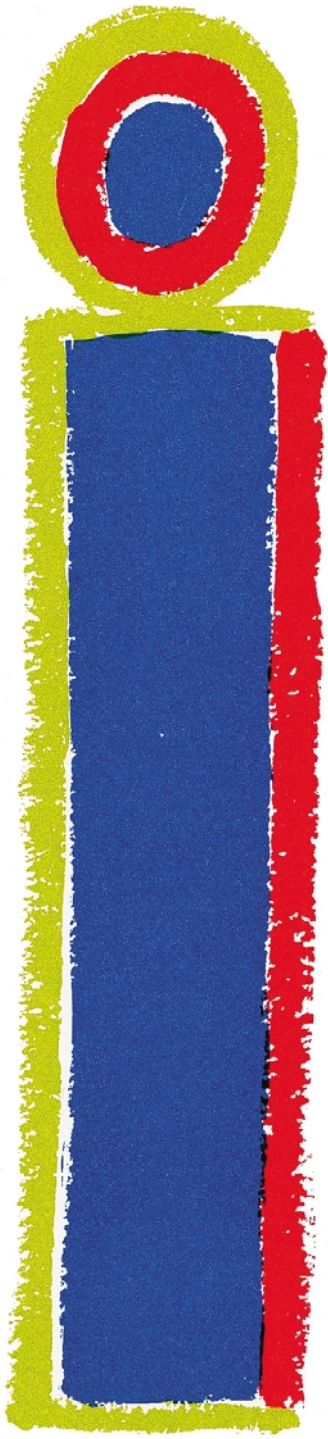
The failure to recognise the importance of large numbers of highly qualified women scientists in the Enwise countries and the inadequacy of gender policies and public support, result in an unacceptable underutilisation of intellectual potential and a waste of talents.

The structure of the Enwise report reflects the wish to put the *women and science* issue in the dual perspective of gender equality and research. The first chapter outlines the main structural factors shaping the way in which gender equality issues have evolved in the Enwise countries from pre-communist times, through the communist regime and into the transition to the market economy. The second chapter focuses on the description of the respective R&D systems and their evolution from the communist times to the transitional period. The third chapter, thanks to the availability of a wide range of qualitative and quantitative information at national level, describes the current situation facing women scientists in R&D in the Enwise countries. The fourth chapter, building upon data available for the 5th Research Framework Programme, as well as on some results of the first year of implementation of the 6th, scrutinizes the participation of women from the Enwise countries in what is seen as a strategic leverage to anchor gender equality in the European Research Area. In the fifth chapter, the Expert Group formulates recommendations on measures and actions to be taken by all relevant stakeholders: the European Parliament, the European Commission, the EU Member States, the national parliaments of the Enwise countries and their policy-makers, universities and scientific communities, media and society, women scientists and women's associations, as well as international networks.

To promote women in science requires changing our own vision of science. It is about real commitment and imagination. To express this mix of utopia and pragmatism, we have chosen to include the contribution of an artist: Sonia Delaunay, whose *Alphabet* letters punctuate the whole report. The result is a report on the art of science complemented by the science of art to provide inspiration, as well as *respiration*, for the reader.

Sonia Delaunay

(Russia, 1885 – France, 1979), born Sarah Sophie Stern Terk, was a cosmopolitan intellectual, who sought to combine the traditions of Eastern Europe with the spirit of Western avant-garde. Her artistic work was autonomous, innovative, vast and composite, and created new trends in the arts. Her creativity consisted in combining simple patterns and colours in the conceptualisation and realisation of different kinds of objects. Her work was, in part, connected to the then traditional *world of women* (patchworks, collages, dresses, pottery, textiles, accessories, scarves), but with Delaunay these assumed an artistic and avant-garde meaning. Delaunay thus represents a bridge between Eastern and Western Europe, connecting the creativity and excellence of women over generations. For this reason, one of Delaunay's works – *l'Alphabet* (1969) - has been chosen as a leitmotiv for the Enwise report, letters symbolising as they do a vehicle for expressing new ideas through writing. **W, O, M, E, I, S** - as in **Women in Science** – and **T** – as in **Talents** – are thus illustrating the report: the **E** for the cover, referring to Europe, Enlargement, Enwise, and also to Excellence and Empowerment; the other letters are inserted between the chapters in relation to their titles or contents.



1.

From national icons to superwomen

Gender and social change

from pre-communism to post-communism

Introduction

The insight into the lives of women scientists in the Enwise countries would hardly be possible without a basic knowledge of a more general **gender context**. This chapter shows that *basic* does not mean *simple*. Even though it strives to provide both insiders (from the East) and outsiders (from the West) with as many explanatory clues as possible, it does not intend to make the explanation too easy. Actually quite a few stereotypical images of an *Eastern European woman* are already circulating, which the following arguments and information consciously attack, emphasising the complexities of the reality of these women. Moreover, the basic starting point here is that the gender history of the Enwise countries may be even **more complex** than their political one, and the latter has indeed been universally acknowledged as complex. The **institutional** and **statistical** part of the gender dimension of this history was the easiest part of the task. A set of **qualitative** explanations is offered, which focuses on the **cultural** impact of political histories to indicate possible ways of interpretation of the data available so far.

The complexity of the given answers is obvious, in view of the very basic findings about the situation of women in the Enwise countries, which at first glance seem to be replete with **contradictions** and **paradoxes**. Such antitheses are typical of the current social position of women, namely the one between high **independence** and **professional activities** of women, on the one hand, and relatively **conservative gender patterns** on the other, which is also relevant when considering the everyday struggles of women in science. To unravel the roots of this confusing combination is to decipher the current contradictions facing such women: this constitutes the final stage in a long chain of cultural changes, in which both progressivism and conservatism had their **specific meanings**, in most cases unknown in Western European societies. Leaving aside the two World Wars, the Enwise countries shared with the rest of Europe (although both wars started in the Enwise countries and lasted there for a longer period of time), these countries underwent in addition **three** other dramatic macro social and political changes: the **liberation** from former empires resulting in the creation of independent nation states (trajectories from pre-modern to modern social form included); the **communist takeover**; and the **rebuilding** of democratic political systems combined with the transition to market-oriented economies. This chapter deals with each of these stages and considers in addition a fourth one, the process of **accession to the European Union**¹. Although, geopolitically, accession constitutes a momentous step for Enwise countries, in reality, it is no more than a continuation of the social and cultural changes begun with the revolutions of 1989.

It should be stressed that **all** the above-mentioned transformations implied what can be called **cultural revolutions**, which on each occasion had a **gender aspect**, but each time in a **different way**. In the **pre-communist period**, the liberation movements in these countries had to find equilibrium between national self-confirmation and the necessity of modernisation and thus gender politics was **two-sided**. The **communist Cultural Revolution** intended to be the most radical and, in terms of gender, the most pro-

1. Country boxes and maps of Europe at different periods are presented in Annex 1 of this report.

gressive, but in reality, due to its oppressive nature, it erected limits to women's emancipation both directly, by limiting their freedom, and indirectly, by provoking conservative counter-reaction, thus the gender change was **contradictory**. The **post-communist** transformation was not evenly uniform throughout the former Eastern bloc countries either, in terms of cultural gender impact: public (mainstream) discourse, re-opened with this transformation, allowed for political, economic and, to some extent also, cultural changes, but apparently feared and inhibited another revolution in the realm of gender relations and family life. Communist overburdening of women and images of Western feminism, depicted as threateningly militant, served as discouraging arguments. At the same time, behind this loud rhetoric, the demographic behaviour of younger women and changes in attitudes, in a great part of the female population, showed a rather rapid change in life strategies towards more liberated and more **thoughtful** women's lives. In this last period, changes of gender culture have been **fragmented**, **multi-speed**, and maybe slower in rhetoric than in behaviour, both **spontaneous** (due to new opportunities) and actively **triggered** by the perspective of EU enlargement. Regarding the panoply of remarkable historical vicissitudes that the Enwise countries have witnessed, the precise cultural context of each period in each country can only be understood when the key is found to the respective combination of **continuities and discontinuities**.

Negotiating gender contract in pre-communist times

In the last two centuries, the basic fate of the societies under consideration has been virtually one of permanent changes of their position in the geopolitical (European) order. Historical analyses still discuss the way the very lines, along which Europe has been perceived as divided, were construed: until the 19th century, the main division was along the North-South axis, during the 19th century the East-West line started to dominate, and later in addition, the concept of Central Europe came into existence, being since this time in a state of permanent flux.

These facts are indeed well-known and scarcely need enumeration but now there are questions to raise in connection with our specific topic: did all these transformations also have, among other things, a **specific gender impact**? If so, in what kind of framework can such impact be theorised and documented? What type of gender impact can be related to those, both real and symbolic, borderlines? And still more focused: was there a **specific historical context** which precipitated or encouraged this development? How did it affect the historical background of the position of women in science in the Enwise countries? A preliminary glance prompts a basic question: how can it be explained that, despite the historical positioning of these countries on the *margins of Europe*, the historical position of women, as testified by various data, can not be regarded as *backward*?

These questions can be properly answered on the base of **gender-based research** which in all these countries has yet to be pursued. Even though there are, here and there, historical data and descriptions available on both the women's movement and on the history of women's social

advancement, a new approach focusing on the **construction of this history**, including the construction of gender in society and science started to be gradually developed only after the collapse of communism, mostly around the end of 1990s (Miethe and Roth, 2003). Thus, if the issue *women in science* is to be grasped in its whole context, support of systematic research of the history of women in higher education and science in the individual Central and Eastern European countries must be strongly advocated.

The basic framework is nevertheless obvious: women's movements in this region were strongly related to the processes of formation and **liberation of nations** (in the 19th century and at the beginning of the 20th century) and later on to the processes of establishments of **new nation states**. In other words, women's movements were in one way or another interrelated with the national liberation movements. The latter had, as compared to Europe's dominating nations, an additional agenda connected to the seeking of the place of the nation in Europe. Two basic goals were followed: one being to catch up with Western Europe, which was perceived as *more advanced*, i.e. efforts to prove their development towards modernisation and democratisation; the other being to strive for cultural self-confirmation, i.e. defence of local cultural traditions. Representing **progressivism**, on the one hand, and **conservatism** on the other, the two goals were, to a considerable extent, contradictory. As recent gender-based analyses show, it was precisely this ambiguity that undoubtedly affected **gender politics** in this period. To put it from the perspective of women's movements in these countries: though their goals were very much the same as in *more advanced* countries, they were operating in more complex conditions: they had, in addition, to negotiate with leaders of national liberation movements, for whom the position of women was a special card to play within their own politics. Though it is true that in every country women's movements had invariably to cope with national leaders, here a different kind of **negotiation** was the case.

Recent feminist historical analyses show that the position of women formed an argument instrumentally used by these leaders in their messages to the Western world, and additionally, it was being used for both progressive and conservative goals. In other words, **marginality** seems to have made gender a more important issue. Thus women's social and cultural position was a means to demonstrate the nation's equality or even superiority compared to Western countries in two ways: on one hand, intellectuals were construing or seeking national **myths** with images of strong and famous women, aiming at demonstrating that a certain kind of **gender equality** had been traditionally part of the national character. Whereas, at the same time, these constructions also needed to be somehow proved in reality, and thus efforts to improve women's situation may not have been as strongly opposed as might have been expected. Yet on the other hand, simultaneously, another part of the intellectual elite and national leaders was in turn putting emphasis on the moral superiority of women as safeguards of **conservative** traditional values in their respective countries as compared to those in Western countries. It is not by accident that this kind of **double rhetoric** can be nowadays found again in argu-

ments by national political leaders (both men and women!) when discussing the implementation of the equal opportunity policy promoted by the EU: the position of women in the Enwise countries is on one hand proclaimed as advanced enough, but on the other our different gender culture is defended.

For some historians (Evans, 1978), women's activists in these countries had to make excessive **compromises** with their male national leaders, meaning for instance that the women's suffrage issue as a requirement by women's groups and as a political theme emerged here considerably later than in the West, often only as late² as the 1890s and at the beginning of the 20th century. Despite this fact, the way towards the legal introduction of women's voting rights was ultimately faster in the Enwise countries than in the Western ones. To explain the latter phenomenon, attention should be paid to approaches that point to the possible long-lasting **positive** effect of the above-mentioned negotiations with the national leaders: *"Discourses on women at the margins of Europe, and above all calls for their participation in national movements, had the potential to create a more favourable atmosphere for women's public activities than was common in Western Europe. Although this had little direct or immediate impact on the everyday conditions of women's lives, the tradition of debates on women and nation was later to be reflected in ideas about social organisation in the new nation state. Views on the place of women had become an integral part of the self-perception of the nation and its character and thus survived even in the new situation following the actual emergence of the nation states."* This conclusion is derived from a comparative analysis of intellectual discourses in 19th century Ottoman Turkey, Russia, Poland, the Czechlands, Slovakia, and also Italy and Greece, and proved to apply to all of them (Malečková, 2002: 241).

Findings like this one can provide us with a key to understanding and interpreting historical data about women's history in these countries. In all these countries, individual **women's organisations** emerged at the beginning of the 19th century. Towards the end of the century and at the very beginning of 20th century, **networks** of women's organisations and their roof organisations were formed so that from this point of view one can speak about women's movement in the proper sense of the word. These organisations had of course their journals to propagate their ideas to the wider public.

2. With the exception of Poland where the women's group Enthusiasts propagating women's participation in public life was established in 1846.

Early women's movements in some Enwise countries

The League of Romanian Women was founded in 1866 and a roof organisation, the National Council of Romanian Women, in 1921. The Association for women's education, Živena, was founded in Slovakia in 1869, the Central Association of Czech Women was set up in 1897, and the National Women's Council of Czechoslovakia was established

in 1923. The Bulgarian Union of Women was founded in 1901, the Lithuanian Women's Association in 1905, and the Baltic Women Union in 1909. In Poland, the Women's League, founded in 1916, comprised as many as 12 000 members.

Source: from the various members of the Enwise Expert Group.

Striving for higher education formed a crucial goal of this movement. In most cases it was an objective which was not contradicted by the policies of national leaders and thus formed a priority, for it was regarded as a way to fostering the nation, when women were regarded as important references points for the educators of children in the national language and patriotic spirit. Even so women activists had sometimes to work underground, as it was the case in the clandestine women's college founded in Poland 1885, called Flying University or in students' organisation at the women's university founded in 1911 at the University of Tartu (Estonia). There was a different history of compulsory attendance of grammar schools by boys and girls in the different countries (in the Hapsburg monarchy in 1774, in Bulgaria in 1878), and of course, there were quite a few distinct female scientists and thinkers who also, without official university graduation, devoted their lives to research. The first women university graduates from this region studied in Zurich in the 1870s - but the most relevant event in our context, i.e. the official institutionalisation of women's enrolment in universities at the state level took place from 1883 in Romania and from 1922 in Lithuania.

After the creation of independent states, women's higher education and scientific careers kept being supported by political representatives, with certain limitations differing from country to country (typically enough, concerning the access to faculties of law). Relevant was also the introduc-

A Slovak botanist: Isabela Textorisová (1866-1949)

After leaving elementary school, Isabela Textorisová privately prepared herself for a teaching career. Up to 1886, she first taught at primary school, then became a supply clerk at the post office, and from 1886 she was the head of the Post office in Slovak city Blatnica, where she lived until the end of her life. Here she started to devote herself to botany, and she did her botanical research in the Vel'ká Fatra mountain region, in Blatnica Valley and Gader Valley where she discovered some rare endemic plants (*Daphne cneorum* L., *Cyclamen fatrense*, *Leontopodium alpinum* Cass. Et al.). She was in contact with significant Slovak and Hungarian botanists. She elaborated and published her botanical experience in the professional periodical *Botanikai Közlemények* (1903). Of great importance is her manuscript work, *On Flora of the Turiec Region*, which she submitted to the competition held by the Slovak national educational non-governmental public association Matica Slovenská in 1930. She published her literary work in the women's magazines *Women's Letters* (1886) and *Girl's World* (1893). She collected dialectological material for Prof. F. Pastrnek and collaborated with Živena (the active Slovak public organisation for educating women) representatives, as well as the representatives of the Czech women's movement.

Source: Velichová, 2003.

The first Hungarian female university professor: Valéria Dienes (1879-1978)

Dr. Valéria Dienes was born in 1879 as Valéria Geiger. She finished as a teacher in the Elisabeth School for Women. She got her PhD degree at the University Péter Pázmány in philosophy in 1905. She was the first Hungarian female university professor. She wrote articles and essays in philosophy and psychology for many scientific journals. She published essays in mathematics, some of them together with her husband. During the 1920s and 1930s she was also engaged in eurhythmics and semiotics. She married Pál Dienes in 1905 and they had 2 sons, Gedeon and Zoltán. She died in 1978.

Source: Groó and Papp, 2003.



tion of co-education in virtually all types of schools. In the interwar period, the share of women studying at universities in the Enwise countries reached up to 25% of the student body.

It has been said that the **suffrage** question had not been prioritised. Nevertheless, in part of the Enwise countries women's suffrage became a reality relatively early, usually after the foundation of independent states. In these cases, it took a certain time to draft the constitution, but even before gender equality was included officially in newly written constitutions, women were usually first co-opted to national assemblies on the basis of provisional agreements, to get them into parliament³ as soon as possible. In Estonia, Hungary, Latvia, Lithuania and Poland, women were granted voting rights in the provisional constitutions⁴ of the new independent states in 1918, and in Czechoslovakia in 1920, i.e. all of them earlier than in a number of current EU Member States. The explanation for this *wave* should be sought both in conjunction with the above mentioned theory and in the context⁵ of World War I, which ironically gave women an opportunity to prove their skills and civic virtues: organisational talents (for instance, in the Red Cross), courage, physical power and professional skills. In other countries, the suffrage rights were introduced later on: Bulgaria 1937, Slovenia 1945 and Romania 1946. Besides basic constitutional laws, specific laws aiming at gender equality in society were relatively quickly adopted.

3. This explains why different information can be obtained as to when women entered the national parliaments.

4. That were later implemented in the Constitutions under great pressure from the first women parliamentarians.

5. In Poland, women's activism in the public sphere took place earlier, during the partitions of Poland, i.e. from 1772 to 1918.

Women's Suffrage in the Enwise Countries and the EU Member States

Year	Country	Year	Country
1906	Finland	1929	Romania*
1915	Denmark	1931	Portugal*, Spain
1917	The Netherlands (to stand for election)	1934	Portugal*
1918	Austria, Estonia, Germany, Hungary, Ireland*, Latvia, Lithuania, Poland, United Kingdom*	1937	Bulgaria (to vote)*
1919	Belgium (to vote)*, Luxembourg, the Netherlands (to vote), Sweden*	1944	Bulgaria**, France
1920	Czechoslovakia	1945	Slovenia
1921	Belgium (to stand for election)*, Sweden**	1946	Italy, Romania**
1928	Ireland**, United Kingdom**	1948	Belgium**
		1952	Greece
		1976	Portugal**

Source: www.ipu.org

Notes: * Right subject to conditions or restrictions

** Conditions or restrictions lifted

The ambivalent gender contract under communism

If the pre-communist gender constellation was a mixture of modernisation and conservatism, the communist can be called a *modernisation without liberation*. For two basic lines of the power elites' policies towards women were self-contradictory: on the one hand, **women were deprived of their own voice and possibility to act independently**, on the other hand, state policy was clearly aiming at **further modernisation of women's public status**. The former step was easily achieved by laws prohibiting assembly and by eliminating all civic organisations, including women's grass root organisations⁶ and their networks, and by total censorship of public speech, which prevented any free reflections of what was going on in society (except in former Yugoslavia). The latter policies were designed in the programme documents of the central committees of the Communist Party and indeed gradually implemented in the following areas: ideological advocacy of gender equality, access to all professions for both sexes, affirmative action in the sphere of political representation at both top and local levels, support of educational advancement of women, coeducation as an automatic rule in all schools (moreover, non-sexist education was practised in primary schools, for instance in practical subjects: boys and girls were trained together in woodwork, sawing, cooking... but this varied from country to country and also from decade to decade), a well organised infrastructure of nurseries, kindergartens and after-school care of pupils, which made it possible for women to be both mothers and full-time workers. Working mothers were further legally protected during maternity leave (which had been gradually prolonged) and during care of their children when ill. Single mothers were relatively well protected by state benefits ensuring minimum standards of living, fathers of their children were easily made to pay alimony, for virtually every man and woman was a state employee and thus also intervention into the salaries by the court via the employer was easy and often occurred. Last but not least, abortion laws became more or less liberal, in most cases they were adopted in the 1950s (in Romania it became restrictive again later on). In all the Enwise countries, the state policy towards women was aimed at ensuring their employment (on the basis of the general right to work) and at making it possible for them to

6. In the Baltic States however, newly established women's organisations existed during the Soviet times, but under strong control of the Communist Party.

A different history for former Yugoslavia

In the case of former Yugoslavia, the gender contract was not based on the idea of *equality*, but rather on that of *complementarity of inequality*. Women were simply subjected to the national goals, not as equals (which might have been the case for Central Europe, but not for the Balkans), but as complementary to men (men warriors, women - caregivers). This different gender patterns could be explained by 1) different pre-communist cultures in former Yugoslavia, including differences like between Muslims and Christians or different gender contracts existing in public and private spheres; 2) different communism, which was not only more

liberal and more open, but at certain times had extremely fast economic development, which made upwards mobility for women rather easy, and not dependent on Party membership; 3) differences in "transition" including wars!; 4) differences in the development of women's movements in the 1980s and 1990s; and 5) development of knowledge about women, that existed in the Balkans and that nobody had in the Enwise countries. Additionally, the issue of development and even poverty might be more relevant for the Balkans.

Source: Blagojević, 2003.

combine motherhood and profession life. Thus a continuous employment model came about, specific for the communist period, meaning that, during their productive years, women combined work and family and continued to work even when they had children, or only with very short interruptions. Such a high rate of employment and real work involvement was exceptional among Western European women.

A situation replete with irony thus came about: women's movement was being liquidated and being denounced as a *bourgeois* legacy: women were politically isolated from each other and from women's movements abroad. And yet within a short time, in most communist countries, during the 1950s (in the Baltic States in the 1940s), they obtained a set of possibilities, which conspicuously corresponded to the catalogue of goals the second wave women's movement was fighting for in the 1960s and 1970s in *bourgeois* countries. The other side of the irony was that the political opposition to the communist regime (meaning some dissent groups, for no open oppositions was possible) tended to stick to conservative values and to idealise⁷ the traditional gender patterns. There were several reasons: the opposition was often linked to a church, which was oppressed by the communist regimes, but also the less religious parts of these societies found it difficult to accept the way the communist regime was removing traditional culture by force. Thus traditional gender patterns (meaning mostly the *bourgeois* model) came to form part of those values, which merited protection. In addition, gender equality was part of official politics and turned to caricature in many respects, thus the issue became stigmatised for the opposition. Last but not least, oppositional struggles for political rights followed mainly (and often solely) the battle of totalitarianism versus democracy.

In communist countries, women were, at the same time, empowered and disempowered. There was **discontinuity** with the pre-communist women's activism and self-reflection and **continuity** in the opening up of the public sphere to them. The most radical critiques of communist regimes say that women were just misused and exploited by these regimes. The most frequent argument is that the traditional male professions were open to women solely in order to get a cheap labour force, especially in industry. Yet the sociological data show a more complex picture of **women's employment** and testify to a real improvement of women's social status during communism. In fact, the majority of women, especially in agricultural countries, always worked hard, as farmers, factory workers, servants, before communism. It is true that the number of women in factories increased after the communist takeover, and as a sign of women's modernisation, they were depicted with machines and as strong, which created the typical stereotype of a woman under communism. Yet the statistics show that, at the same time, the young generation of women was rapidly catching up with men at the level of education (an open university system made it possible also for the older generation), so that by the end of 1970s, they achieved parity with male students on the secondary and in the majority of the Enwise countries also on the tertiary levels. With it, the **structure** of female occupation was gradually changing and a sizeable num-



Polish poster:
"We greet the women who work
for peace and growth of the fatherland!"
Source: *Gazeta Wyborcza*, 2003.



Polish poster: "Youth going towards
the wonderful socialist future of Poland"
Source: *Gazeta Wyborcza*, 2003.

7. Interestingly, in this context, the only sphere free from the interventions of the state was the family, which had a traditional structure. This was often emphasised in criticism.

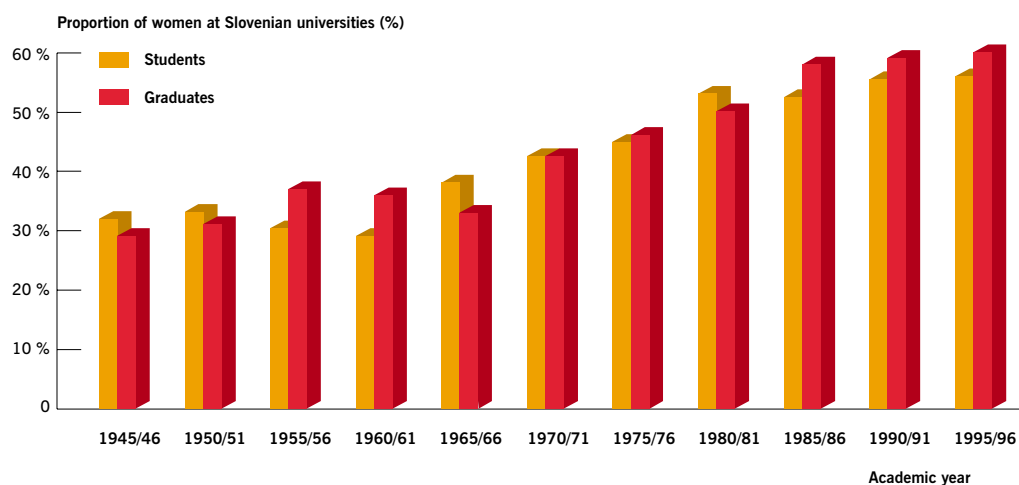
ber of women were moving to more qualified jobs. Among university graduates, the number of female doctors, teachers and also lawyers grew considerably, often exceeding that of their male counterparts. Numbers of women scientists were also growing gradually.

And yet, despite all the propaganda on gender equality and the growing professional skills in women, and despite attempts of a non-sexist education, the **horizontal and vertical segregation** between the two sexes were not lessening, but rather deepening. The labour market was segregated into better paid male and worse paid female areas and despite the fact that more and more women were entering highly qualified professions, it was not mirrored in leading positions. Though this phenomenon has been noticed by Western sociologists in Western countries as well, there was an important difference: in communist countries, the existing *glass ceiling* was not reflected on, named or criticised by women. Neither was it a theme in the social sciences. As was repeatedly stated by the members of the Enwise Expert Group, namely the up to now persisting lack of **gender awareness** in the majority of women themselves, including women in science, has turned out to become the major breaking factor to women's career advancement: in terms of career limits being accepted as a natural consequence of their dual role, and in terms of very low sensitivity to unequal treatment.

How can such a self-limitation be explained? The wider context must be taken into account. The very **concept of a career** under communism was distorted by specific conditions of a totalitarian state. One of the preconditions for most scientific careers from the PhD degree upwards was **party membership**⁸. This factor varied according to the respective disciplines, representing an almost absolute obstacle in the humanities and social sci-

8. It was not quite the case in Poland, where party membership was helpful, but not mandatory, in order to carry out academic career. But it has to be admitted that there were numerous cases of slowing down the careers of academics openly involved in the dissident activities or even removing them from academia.

Women at Slovenian universities (1945/46 to 1995/96)



Source: Slovenian Statistical Office in Mladenič, 2003.

ences (which was a typical female choice), but not so much in natural sciences. Many potential career men and women preferred consciously to avoid party membership, even when it meant a breaking factor to their further career. Women's role in family eased their reconciliation with this choice more than for men.

Another important factor that could not be found in non-communist countries and that did affect the specific concept of female career was the policy of **social up levelling**. In a communist country, where the general social equality issue was regarded as the basic one, the state policy had a **varying impact** on women's lives. Because the category of *domestic servant* ceased to exist (being classified as typical exploitation), many former career women found life more difficult under communism. Former, pre-communist career women⁹, being part of the intelligentsia class, who were regarded as a natural enemy of the socialist revolution, were often persecuted, sent to a factory or to prison. But for former servants or women from the lower classes, state policies towards women often meant personal advancement and improvement of their social situation. The **pre-communist female elites**, which often had a strong cultural capital from their intellectual or wealthy families, with self-esteem developed on the basis of their achievement within a competitive milieu, and often in contact with women's activism, were devastated. Simultaneously, **new groups** of women who were enjoying rapid intergenerational social mobility towards careers,

9. In Poland, this happened only for women who, during World War II, fought in the Home Army.

Distribution of women and men in Hungarian universities from 1970 to 2001

Year	Women	Men
1970	44.7 %	55.3 %
1980	49.9 %	50.1 %
1990	48.8 %	51.2 %
2000	53.6 %	46.4 %
2001	53.4 %	46.6 %

Source: Hungarian Central Statistical Office in Groó and Papp, 2003.

A Czech case of discrimination

When I returned from maternity leave, I felt for the first time that I was not a fully valued employee, not because I was a woman, but because I was a mother, although I did not work less than any other colleagues. For the first time, I experienced discrimination (evidence of which was for instance that my salary stopped increasing). But of course, I was first of all discriminated, because of my refusal to join the party, so I was not fired, but treated as kind of a "second class" employee. Despite this position of mine, I still enjoyed my academic life as a kind of luxury, I felt still privileged.

Biographical statement by Hana Havelková, Czech member of the Enwise Expert Group.

Experiencing *natural* discrimination

In 1976, the Institute for Philosophical Research of the Bulgarian Academy of Sciences announced a competition for a grant for doctoral study in Philosophy of Science at the Institute. I entered the competition together with 4 other graduates. At this competition, a male physicist and I scored highest with equal marks. The man was preferred. Then, I asked the head of the *Philosophy of Science* department: "Why did you prefer the other person?" having in mind that both of us were physicists and both of us had scored equal marks. The answer was short, simple and *natural*: "Because he is a man, but do not worry! Next year will be a new competition for a doctoral grant at my department and you are welcome to try again". I was not pleased by this reply, but I was not angry either, because I found it *natural* – the things are as they were, fixed and unchangeable and I could not do anything. At that time I lacked sensitivity for discrimination. Only later (1990), after my participation in an international project on "*Gender Gap in Higher Education*", I realised for the first time that in 1976 I had been in fact discriminated against, but that at that time I was not aware of it.

Biographical statement by Nikolina Sretenova, Bulgarian member of the Enwise Expert Group.

were formed gradually, yet this was happening in political conditions of drastically limited personal self-determination and of dubious character in that career advancement required moral compromises with the regime, and was subject to permanent ideological censorship, without cultural (familial) capital, reflection by and support from the feminist scene, and **without public discussion** on the necessity of the renegotiation of domestic roles, on glass ceilings, prejudices against women etc. Thus not only was the first wave of female intellectual elites suppressed, but also available patterns and models of female career were removed, and a **different career model** started developing *ex nihilo*. Although most of this was true also for men, the relationship between men and career was of course more automatic.

Nevertheless, given almost fifty years of full female employment and the permanent growth of women's professional skills, added to the availability of a childcare infrastructure that made fulltime employment possible, the low representation of women in leading positions or top positions in science is surprising. A special kind of feminist *archaeology*¹⁰ must be performed, namely the **research** on what exactly has happened to the gender constellation under communism. Basic statistical data of that time, broken down by gender, can usually be found in archives, such as demographic data or the rough overviews of the employment structure. Remuneration data had been usually monitored by economists, so that the basic development of women's social status can be reconstructed. Yet, since neither citizens nor social scientists were allowed to point at social problems openly, the data were rarely analysed, theorised and interpreted. Concepts such as *pay gap* or *glass ceiling* were unknown. Women's **double burden** or the so called *double shift* was discussed from time to time, but the habit of connecting employment with maternal duties became **naturalised**.

10. Using here a current and favourite Western feminist term for reconstruction of forgotten and hidden women's history...

"I still have clearly in mind...remembering..."

When Dr. Dorothy Crowfoot Hodgkin was in Romania, I was appointed to join her to meet Elena Ceausescu, who at that time was called: "*the highest scientist of the Romanian communist regime*". Despite the 38-year difference of age between us, I felt very close to Dr. Crowfoot Hodgkin. She was honest, gentle and supportive. I was so close to the Nobel Prize than I had ever dreamed of being! But when we arrived at Elena's office, I received one of the hardest orders I ever had in my life: I had to stay outside, in a special room, with two big Labrador dogs, which were watching at me. I had to wait until the end of their meeting, which lasted for more than 2 hours. Could you imagine what Dorothy could think about this situation? Could you imagine the weight of humiliation that I, as a young scientist, had to experience?

Biographical statement by Mioara Florica Tripsa, Romanian member of the Enwise Expert Group.



Dorothy Crowfoot Hodgkin with Mioara Tripsa (left) and Eugenia Kovacs (right) during her visit in 1985 at the Department of Biophysics of the Medical University in Bucharest.

Women's role as a second **breadwinner** was in the vast majority of families an economic necessity, but it also became a cultural norm, so that women started to perceive their job outside the family as their *duty*, as did their husbands and their communities. But since they were only regarded (also by themselves) as *second* breadwinners, the **traditional division of gender roles** kept being regarded as *natural* as well. Very little qualitative research has been done so far though it is urgently needed in order to learn about women's subjective perception of their lives and about their everyday strategies.

Transformation: new amalgam of continuities and discontinuities

Gender scholars and women activists who emerged after the collapse of communism started addressing the issue and looked for explanations of the specific kind of **gender blindness**. Despite lacking systematic research, there are some general hypotheses about the sources of gender blindness, as inherited from the communist time. It can not be ignored that the character of modernisation processes, as described above, removed the pressing legal barriers, which formed the goals of the women's mass movements in 1970s in the West. Though serious gender based problems were persisting during communism and new ones came into existence, they became **more hidden** and shifted to a rather **more cultural** level, which was virtually impossible to tackle. The difficulty had been especially caused by the **combination of modernisation with conservatism**. As shown above, modernisation of professional status was not accordingly accompanied with modernisation of cultural patterns - moreover, traditional patterns were often even fostered by the specific role the family acquired under communism, namely the role of a refuge from the regime. And the specific female **career model** as described above, in which having children was included and resulted in an acceptance of limited career ambitions, has been presented by many women in answering the question of whether they feel discriminated against (be it in sociological research or media interviews) as a matter of more or less **free choice** (meaning the acceptance that the choice of having children automatically requires certain compromises).

Women in communist countries were often characterised as *superwomen*. Many seemed genuinely to feel like that, strong enough to solve their problems on their own. Another important level of explanation has to be sought after in what was (and partly still is) regarded as a **political issue**. For even if interviewed women did admit gender inequalities, sexism and the like, they still tended to regard it as a **private problem**, refusing to recognise unfair treatment as a systemic gender based problem and to treat it politically. Lack of **public discourse** has been the main reason. Under communism, there was no public actor to articulate gender issues in free, authentic and differentiated way. Surprisingly, the **official propaganda** made obscure even such an obvious fact that, through mothers, it was actually children who were protected, not women as such. Moreover, women's issues did not represent a theme for the **political opposition** either. Not only were women's issues not popular, due to the fact that it was part

of official communist policy, but the priority was put on general (individual) civic and political rights. Though currently the public discourse on gender issues has been opened, the process of addressing gender issues was considerably slowed down, after 1989, by combined **antifeminist** and **anticommunist resentments**.

The transformation process that started in the Enwise countries after the fall of communism¹¹ has been underpinned by principles, which are entirely different to those central to communism. Individual political freedom and freedom of choice are regarded as superior to all other values. Yet in most of the Enwise countries, the anti-communist turn brought about a **conservative backlash**, including the tendency to push women back to their traditional roles. Often this conservatism was closely connected to the resurrection of the political position of church or with the rise of nationalism.

11. Which depending on the countries was referred to as the fall of the iron curtain, velvet revolution or as "die Wende" in GDR, meaning, in German, radical political change.

A different pattern in the new Eastern Länder of Germany

With comparatively low general levels of household income, the transformation process in Eastern Germany has turned many women into the principal earners of family income. On average, women in the new Eastern *Länder* of Germany account for almost 50 per cent of household income (compared with one third in Western *Länder* of Germany).

The employment rate of married women with children under 18, in particular, is considerably higher in the new states of Germany (East 74% compared to West 56%).

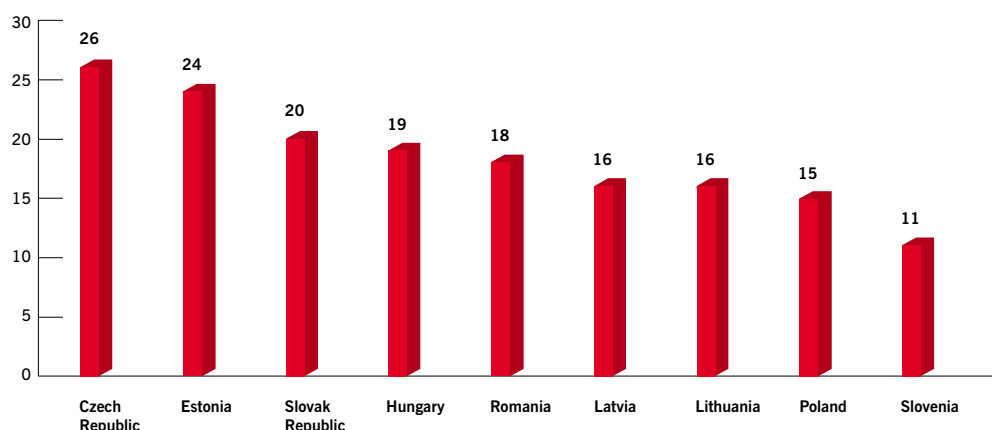
In 1991, 35% of East men and 30% of East

women, when surveyed, commented: "It is much better for all, if men are fully employed and women stay at home to look after household and children". Five years later this percentage reached only 27% among East men 27% and 26% among East women, which means no chance for a revival of the conservative family model of *a working man + a housewife* (whereas, in both surveyed years, 50% on average of West men and women agreed with this conservative family pattern).

Source: Nickel, 2003 and Schenk, 2003 cited by Burkhardt, 2003.

Gender pay gap in unadjusted form in 2001

In the Enwise countries, like in the EU Member states and other regions of the world, women's income is on average lower than that of men.



Source: Eurostat, 2003.

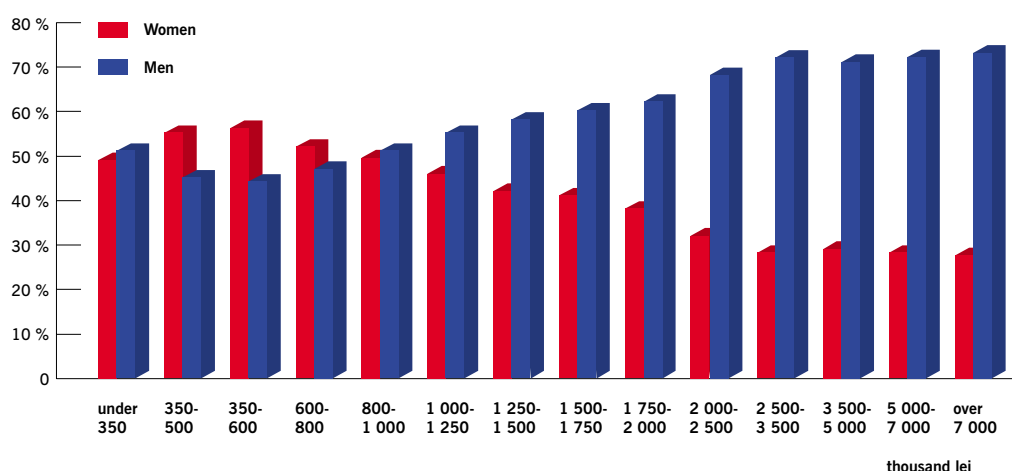
Note: The gender pay gap in unadjusted form refers to the difference between women's and men's gross hourly earnings as a percentage of men's average gross hourly earnings. For example, the unadjusted pay gap at 26% in the Czech Republic, which is the widest gap of all Enwise countries, means that on average, women earn 74% of men's earnings for every working hour (see also

Chapter 3, "All that Glitters is not Gold"). This measure is referred to as unadjusted because it does not take into account factors such as occupational and vertical segregation and level of qualification. Since hourly wages are considered in this measure, the full-time / part-time dimension is partly accounted for, but there is no adjustment made for the fact that part-time salaries are generally lower *pro rata* than full-time salaries.

Differences between the individual countries as to **new gender ideology** are quite substantial and can be attributed to different religious and political histories - but the real outcome has been the same: women's return to full-time work in the family home was not only **not** happening, but was even hardly possible for **economic** reasons. Still more surprising is that neither the percentage of part time jobs increased significantly: the majority of women of productive age work full time and spend on average only slightly less time at work than men. There are also **structural** reasons. The post-communist legacy of strong horizontal gender segregation of the labour market has made women irreplaceable in the labour force. Women usually comprise from about half the labour force up to 80% thereof or more among the employees in the services and health care sectors, in the banking and insurance industries, and in commerce. Moreover, due to their acceptance of lower remuneration, they made it possible to keep whole segments of work still functional (nurses, teachers and others). **Psychological** reasons are important as well: research indicates that women value having work for the financial independence it entails as well as the possibility of social contacts.

The question whether women can be seen as the losers of the transformation processes is not simple to answer. **Unemployment** rates vary throughout the Enwise countries and have also been permanently changing in time up to now. But even in cases when the difference between male and female unemployment rates is not very dramatic, another gender phenomenon has been noticed, namely women's greater **flexibility** in the labour market. It means for instance, a greater willingness to requalify and change jobs (horizontally), but also to accept a position below their qualifications, and first of all, in general, to **work for less**. This is true for less qualified professions where women work for pitiful salaries, but such inadequate remuneration is also an issue at managerial level for women.

Employees breakdown by salary group in Romania (October 1998)



Source: NCS survey in Tripsa, 2003.
 Note: 1 € = 38080.0 Leu - Financial Times - Sept. 15, 2003

The traditional practice that men automatically expect and are offered better salaries, and that women are offered and accept lower salaries still persists. Last, but not least, **horizontal segregation** of whole segments of the labour market has been reproduced in the transition period for new reasons: the segments, which were *feminised* under communism, now remained part of the economically poorer state sector (schools of all levels, health care etc.). And again, this means that women keep their employment (competition is not very intense in these sectors, for men had left for financially more attractive areas), but under conditions that can be characterised as exploitative and **under-evaluating** their capacities and skills. Needless to add that, though women keep working hard in the professional sphere, they are nonetheless, due to their position of being the **second breadwinner** in most partnerships, expected to accomplish the duties of parenthood not usually expected of their male colleagues.

In terms of **everyday life**, the process of transformation during the 1990s has been gendered from the very beginning. Men eagerly returned to their traditional public and professional positions and were becoming economically and socially stronger than women. For women the situation has been more complex. On one hand, the burdens facing women became even greater after the collapse of communism. Social transformation meant **increased demands** both on women's nurturing roles (to cope with the

Gender blindness still active?

YES, I think women do enjoy equal opportunities. Of course, there are always some situations, where men and women are dealt with differently, but these are totally dependent on the particular people involved, not on society as a whole.

Estonian young female scientist (age: 36, medical sciences) at the Enwise workshop on Young scientists, Prague, April 2003.

Turning private struggles into a public issue

We still assume gender problems to be more private (personal or woman's own) than social. But, it is the problem of society as a whole, how to support research and sustainable development, it is not only its legal right, but also its duty, to utilise all human potential and to benefit from the scientific achievements of the whole of human kind.

Slovak young female scientist (age: 35, natural science) at the Enwise workshop on Young scientists, Prague, April 2003.

Feminist movements in Yugoslavia

Besides the institutional and legal support provided by the federal State for gender equality, feminist movement started to develop already in the 1970s in Zagreb, Belgrade and Ljubljana. Feminists were marginalised, but not really forbidden, due to the fact that Yugoslavia was rather open to the West and very much under the influence of Western intellectual developments. The first international feminist conference in communist countries was organized in Belgrade (1978), as well as the first post-communist feminist conference (1994). In the 1980s women's issue became part of the public discourse and scientific debate. In the second half of the 1980s feminist publications, translations or even original feminist contributions, were edited. In this decade also a scientific journal, *Zena*, was published in Zagreb, where different researches on

women were published from all over Yugoslavia. Moreover, the *Yugoslav Sociological Association* established a section devoted to *Women and Society*. The issue of women and science was also debated. In the same period, the *Interuniversity Centre* in Dubrovnik was organising international conferences and courses dealing with gender issues directly or indirectly. These seminars were the occasion for women scientists coming from the socialist countries to travel abroad and to meet foreigner colleagues. Feminist movements in Yugoslavia were creating an *alternative political space* in the crisis of the socialist system and before the traumatic beginning of civil and ethnic wars in the 1990s.

Source: Blagojević, 2003.

greater psychological pressures on their family members under rapidly changing life conditions) and on their working activity (to cope with economic hardships in the family, to keep their jobs after the right to work had been eliminated). Thus the previous division of roles acquired new dimensions - men concentrating more than before on public success, women thus bearing the responsibility of the well-being of their families also under new conditions and new hardships.

All this is true in particular for families with children as well as for women and men whose formative years were spent under the grasp of communism which inevitably influenced their personalities, values, social and professional organisation, etc. Cognitive patterns of the youngest generation are more complex, being partly rooted in local gender culture, partly new and different, responding to the changed social conditions. The process of transformation has obviously opened up opportunities, not enjoyed before, due to the changing economic situation and people's preferences and values have changed accordingly. As a result of this transformation, a generation gap, which has resulted in wide-ranging changes in behaviour and sometimes in values, is increasingly evident. In addition, it is clear that the liberalisation of the economy, which has also led to changes in society, has brought about new opportunities especially for young women and women without families. Young women's life strategies have changed, they get married later and have fewer children, but according to opinion polls, the higher value of family and children over professional career still prevails in the rhetoric and mentalities of society.

The inherited (more or less unified) model, in which women were used not to have to choose between career and family, has persisted and can be regarded as positive. At the same time, social **differentiation** among the female population is dramatically growing. According to some sociologists, the influence of **age** and **education** on economic status tends to be

Starting to understand... (I)

However, during the last 15 years that I have been working in research management, I started to notice the signs of gender inequality in science. Sometimes I compared the number of men and women submitting proposals to our organisation for international research grants and I observed that there was a shocking difference in numbers. I slowly understood that the bosses at most of the institutions submitted the proposals under their own names, while the female colleagues – who usually conducted the real cooperation with the partner institutions – had the right to prepare the proposal and later to take part in the cooperation activities. These observations led me closer and closer to the women and science initiative, and finally I became the Hungarian member of the Enwise Expert Group.

Biographical statement by Dóra Groó, Hungarian member of the Enwise Expert Group.

Starting to understand... (II)

In the new job, I also began dealing with women's issues. Under communism, women's issues were an absent topic and I never got the idea to even think about them. Yet the opening of the country had brought also new impulses from abroad and I soon realised how important an issue this is and how the power of totalitarian system was able to let people forget to reflect even upon their everyday lives. I regarded it also as my professional duty to catch up this terrible debt towards the gender problematic.

Biographical statement by Hana Havelková, Czech member of the Enwise Expert Group.

even greater among the female than among the male population. There has also been an increase of singles, both male and female, and cohabitation as the increasingly preferred family model. It has to be stressed that the Enwise societies are still not yet settled: young women, who have been so far prepared to postpone starting a family, still ask themselves whether and how to manage both career and family is possible in the new, competitive society and whether negotiation with their male partners will be possible, given the persistence of conservative views (more so on men's side). **Young women scientists** start to reflect on these hardships. The cultural impact of cognitive experience of the new generation is very much in flux at present and there will be certainly a great diversity among the individual social groups and regions. The explanation of demographic trends needs more research focusing on qualitative analysis - for the time being, general conclusions can not yet be stated with complete authority.

Public discourses (theories, media, literary, art, etc.) are changing only slowly, but their change can not be stopped. **Women's activism** experienced a resurrection immediately after the collapse of communism in all of the countries concerned – in the former Yugoslavia earlier. New women's organisations started dealing in the first place with the most serious social problems concerning women such as domestic violence and violence against women in general or with discrimination in the labour market. In Poland, it was especially the passage of the law prohibiting abortion that triggered the mobilisation of women's organisations. Two points must be enumerated from the comparative point of view: the **historical interruption** between pre-communist and post-communist women's movements was so long that the post-communist women's movement can not rely much on its pre-communist history. Though it does have some symbolic supportive affect in terms of the realisation of women's own history, the world has moved elsewhere in the meantime. So the new wave had to start virtually from zero. That said, however, it should be noted, secondly, that the new women's organisations are not isolated given that they receive

The right to choose

I shifted my identity from a traditional married woman to a self-made woman, who is defined by others (but not by Western colleagues) as a feminist. I have to say that my profession, especially my involvement in gender studies, offers me the possibility to understand and, what it is more important for me, to claim that I have the right to live without a man and children. It is my own life. Yet my specialisation in gender studies restricts my career, preventing me to access to higher scientific positions at my institute.

Biographical statement by Alina Zvinkliene, Lithuanian member of the Enwise Expert Group.

Learning early... from abroad

In 1983/84, I spent a year in the US on the American Council of Learned Societies fellowship, which was a true feminist milestone in my scientific career. I became associated with a university group of "dissenting" women professors, displeased with the differences in the system of promotion and salary gaps between female and male professors at the State University of New York at Buffalo. Each month, we met at one of the professors' houses to discuss the promotion criteria and pay rolls and, towards the end of that year, wrote a report of our sessions to the President. I revisited Buffalo 5 years later to find out that our efforts had not been in vain. My scientific career has changed considerably since then. Everything I have written afterwards has been inspired by feminism and – later – by gender theory.

Biographical statement by Elżbieta Oleksy, Polish member of the Enwise Expert Group.

direct help from many women's organisations and worldwide legitimisation of a whole set of gender issues as public and political issues of high importance that has affected changes in gender culture in the West.

These have been imported to the Enwise countries through literature, journals, films, etc. or through personal experience after 1989, with some exceptions. Thus these cultural changes can be accelerated through contact with the world, yet there is still a long way to go. **Media and advertising** are replete with gender stereotyping images and of outspoken sexist utterances, which are not recognised as such by audiences. Not many people are really sensitive to cases of misogyny in the media, nor are boards in charge of supervising the correctness of media contents.

Towards EU membership

International mechanisms designed to prevent all forms of discrimination against women (as formulated in CEDAW) and/or equal opportunity policy (as conceived by the EU), have formed an essential role of making the governments of the Enwise countries deal with gender issues after 1989. Along the **governmental reports**, which after the signature of the Beijing Platform for Action had to be delivered to the UN Commission for Women's Rights, not only required the governments to collect information, to form working teams of civil officers and to communicate with women's organisations, but via the critical comments by the international commissions the local readers got a **feedback** and learned what was missing in the state's agenda from the perspective of international comparisons. Unfortunately, governments of the Enwise countries have not been particularly influenced by UN recommendations and, moreover, the information prepared under the aegis of the UN has not been sufficiently disseminated. Developments at the EU level have, by contrast, brought about greater practical reform. The adoption by local governments of equal opportunity policies within a process of "harmonisation" of the legislation of the accession countries with that of the EU has proved to be

Misogynist image in the Polish media

"94 FM - It Turns Us On" - This advertisement of a radio station *Radio 94 FM*, showing a woman's breast whose nipples are replaced with radio knobs, appeared on billboards in Warsaw in January 2003. The radio station is mostly addressed to men and is thought of as a kind of *gentlemen's club*.

Interestingly enough, the person responsible for the radio's promotion was a woman. This advertisement provoked protests by Polish women's organisations.

Source: Oleksy, 2003.



the necessary catalyst to transform their positions. Despite the adoption of legal changes, however, the problem of their implementation remains an issue. Women as yet have to recognise themselves when the law is violated to their disadvantage, but thanks to the existence of legal amendments, the first cases have come to court, women's organisations have started to train certain groups of women who are the most vulnerable to become aware of their new rights. Last but not least, since the new legislative changes, such as the explicit prohibition of harassment and discrimination at the workplace, or of discriminatory advertisements, have been discussed by the national parliaments and amply reported in the media, they contribute strongly to opening up a general public discussion about these topics. The effect on local cultural patterns and ways of behaviour can not be denied.

Concluding remarks

Before the communist takeovers in the Enwise countries, the situation of women, from the comparative perspective, can be summarised as follows: their basic civic rights, as well as the right for education and property, were achieved in a process similar to that in Europe and at about the same time, being in most cases even accelerated due to the process of national liberation movements. Women's activism was originating both as part of the national movements and, importantly in our context, as part of an international women's movement, being in touch with other Central and Eastern European countries as well as the all-European women's networks. Yet traditional cultural gender patterns have of course persisted as well. Although in an international comparison, the level of *patriarchalism* is mostly difficult to assess and measure, it can be assumed that it would differ from country to country in both East and West: therefore, it would not be correct to produce stereotypical images on the East and West as blocks. Moreover, the Enwise countries went through two other dramatic macro social and political changes: from partly traditional and partly *bourgeois* societies into communist ones, and from a communist to a demo-

Misogynist images in the Estonian media



"Oh mirror, mirror on the wall ... Who is the fairest (woman scientist) of them all (in Tartu*)?"
PS: Tartu is the main university and knowledge town in Estonia.

Source: Hillar Mets in "Eesti Päevaleht", Estonian daily newspaper, September 9, 2003.



"The first talking thing was invented by God... Edison invented the first talking thing that can be switched off..."

Source: Hillar Mets in "Eesti Päevaleht", Estonian daily newspaper, August 13, 2003.

Misogynist statement in the Estonian media

A lecturer starts his lecture with these words: "Now we are going to talk about matters, which the Chinese and women obviously won't understand..."

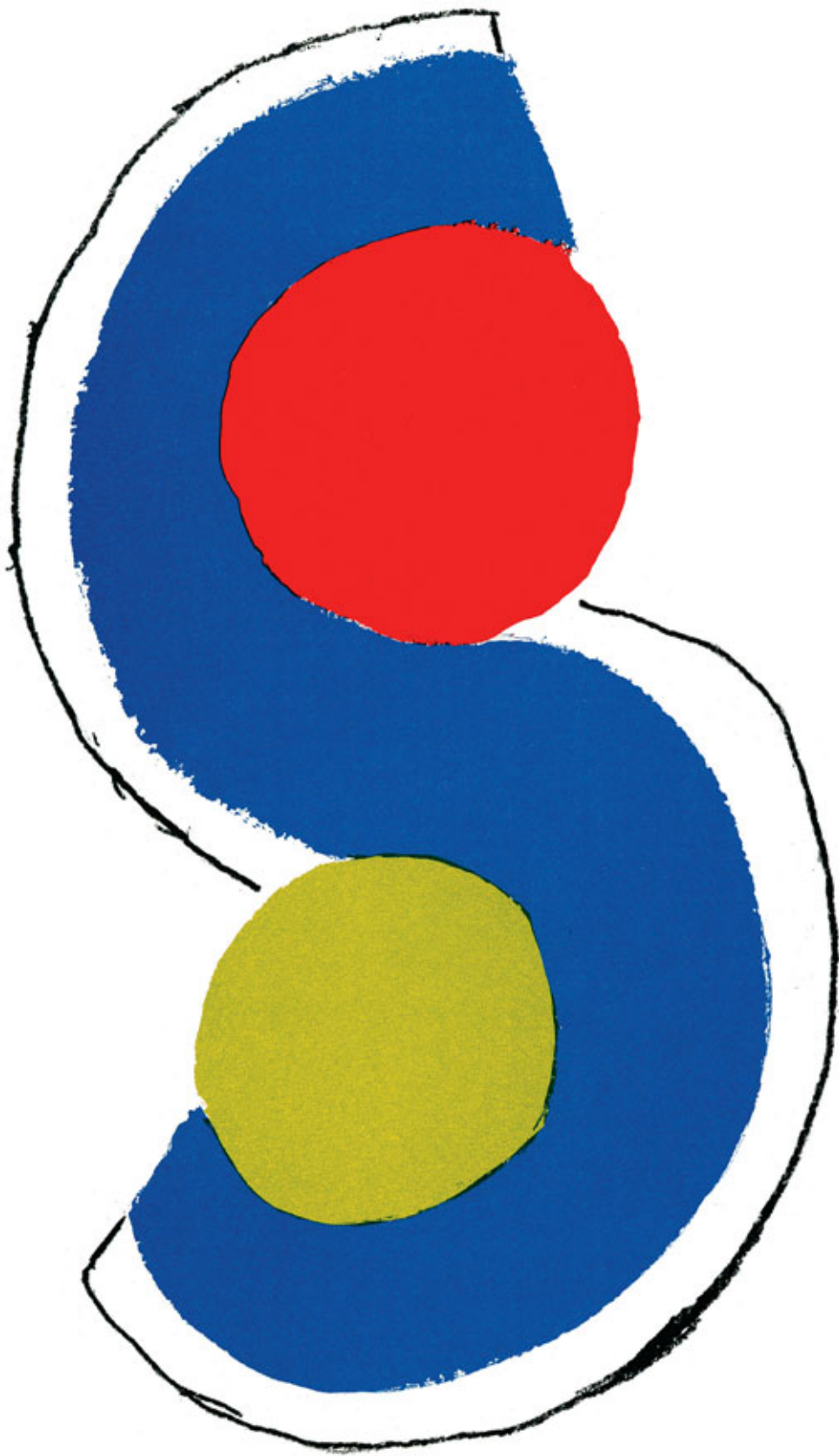
Source: Monthly magazine "Eesti Naine" (Estonian Woman), No. 9/1989.

cratic regime, which should be also theorised as a jump from cultural isolation to a globalised culture. All these social changes included their gender dimension, implicitly and explicitly. Communist gender patterns have been changed relatively slowly so far, yet the cognitive experience with the newly established competitive society, the new life strategies in young generation and the impact of international standards of gender equality policies, do result in an increasingly visible cultural shift.



Gender equality under communism, as with this perfectly elaborated imaginary object shown in the picture above, was simply an illusion...

Source: Bruno Ernst, Abenteuer mit unmögliche Figuren, Taco erlagsgesellschaft und Agentur, 1987 in Velichová, 2003.



2.

Funding without freedom, freedom without funding

Higher Education and Research & Development
sectors in the Enwise countries

Introduction

As it was the case for women's movements, a discourse building upon **continuity vs. discontinuity** can be used to characterise the changes over times of Higher Education (HE) and Research & Development (R&D) sectors in the Enwise countries. This chapter aims to provide an understanding about the current state-of-art of those sectors on the basis of a comparative analysis between the various Enwise countries.

Joseph Ben-David's concept (Ben-David, 1971) of the *science centre* and the *science periphery* is assumed as a relevant methodological reference point for this analysis. According to this conception, the country, which plays the role of *science centre*, provides (for a certain period of time) the norms, patterns and ideals of the scientific activity, including the models for HE and R&D, the structures of organisation and management of science, i.e. the *science policy*. Whereas the countries of the so-called *science periphery* copy the science values, models and structures provided by the *science centre* or at least imitate them. The countries of the *science periphery* transfer and adapt the *science centre's* models to their national backgrounds. During the 19th century, France played the role of *science centre* for part of the Enwise countries, replaced by Germany at the beginning of 20th century. After World War II (WW II), the former USSR played, for about fifty years, the role of *science centre* for the majority of the Enwise countries.

The structure of the chapter envisages three periods, with a special focus on the transformations of HE and R&D sectors in the Enwise countries from the communist period to the transitional period, as well as on the transitional period itself.

1. Pre-communist times (until World War II)
2. Communist period (World War II - 1989)
3. Transitional period (1990 - 1998/9)

No special focus is set up on the impact of these transformations on women scientists of the Enwise countries because most members of the Enwise Expert Group explicitly claim that these affected both women and men scientists *in an equal way*. Nevertheless, the expected scenario set up by the newly shaped HE and R&D sectors of the Enwise countries is suggestive of a pessimistic expectation about the future prospects of women in science in these countries.

Pre-communist times (until World War II)

The institution building of modern universities started at the beginning of the 19th century and was based on the diversity of theoretical conceptions and visions about the supposed mission and organisational structure of the new type of higher education institution. Among them was the German ideal of a **modern university**¹. According to this ideal, the key features of the modern university were to be the unity of teaching and research and the principle of university autonomy.

During these pre-communist times, R&D activities were carried out at the already established modern universities in the majority of Enwise countries. In parallel with the university institution building, some Enwise

1. It was elaborated at the beginning of the 19th century by a group of eminent German philosophers and thinkers, such as Fr. Schelling, W v. Humboldt, J. Fichte, Fr. Schleiermacher and later embedded in the establishment of the Berlin University (1809).

countries also founded their National Academies of Sciences (NAS) according to the modern Western model, i.e. as associations of eminent scientists. Some distinguished university professors were at the same time fellows of the NAS and the two institutions worked in synergy and enjoyed autonomy.

Communist period (World War II – 1989)

The issue of communist past is a very sensitive one, because the communist regime affected the daily life of at least three generations of people, including the lives of women and men in science. In the course of time, the regime itself changed. The regime was differentiated not *only in terms of time, but also in terms of location*. From this point of view, the Enwise countries had a common *but not identical* communist past. Therefore, a particular mixture of positive and negative experiences vary across the Enwise countries, as well as across the different generations of women and men scientists, the youngest ones being the most indifferent to the issue. The effect of the situation, as it is, is that every attempt to draw a common picture of the communist past faces a concern of over-generalisation and sometimes of overstatement. On the larger scale of Enwise countries' public opinions, the communist past still bears subtle meanings, which have led to a certain societal frustration. This frustration stems from the existing diversity of assessment of this communist past, based on different personal experiences. It happens that the experience of some people may **contradict** that of others. During the Enwise workshop of April 2003 on *Young Scientists*, a young Slovenian computer scientist² stated that in his opinion “*the main reason for scientists to leave their home country is not money, but that they are fed up with local frustration and the complexities of the environment*”. Nowadays, facing the said problem, social and humanity scholars are re-thinking the issue of the communist past in terms of a *dynamic process* rather than in terms of a *static state* in order to validate every particular positive and negative experience **in an inclusive way**.

After World War II (WWII), most of the Enwise countries adopted the *Soviet model* of HE and R&D system. This constituted the first dramatic discontinuity with their national cultural traditions and institution building. HE and R&D sectors in the Enwise countries were completely transformed and **lost their institutional autonomy**. It meant firstly the introduction of a division of the HE and the R&D sectors. The new mission of the universities and equivalent HE institutions mainly became to teach and, to a lesser degree, to perform research. The NAS of the Enwise countries were re-organised in accordance with the organisational structure of the USSR Academy of Sciences. Thus, the structure of the Academies of Sciences' research institutes became the major organisation form of the R&D sector in these countries.

Secondly, it meant the implementation of a strict governmental planning and control on both sectors. The communist party's authorities laid down directives regarding the formation of state S&T policy. HE and R&D sectors were subject to strong ideological pressure, including the promotion and career building of research and teaching personnel.

2. See Enwise workshop on *Young Scientists* at the end of Chapter 4.

Last but not least, the promising human resource potential of the Enwise countries was offered the opportunity for graduate and postgraduate studies at the *science centre* (USSR). The research institutes of the Enwise countries also used to purchase equipment from the Soviet Union.

For the purposes of this analysis only and in order to facilitate the understanding of communist R&D functioning, the Enwise countries have been clustered into three groups³:

- **Bulgaria, the Czech and the Slovak Republics** (at the time jointly part of Czechoslovakia), **Hungary** and **Poland**⁴ during the communist period, these countries were independent nation states under the influence of USSR and part of the so-called Soviet Block. According to J. Ben-David's concept, these countries were part of the *science periphery*. The majority of these countries had already established their NAS during the 19th century. Additionally, these countries had already built democratic societies and market-oriented economies, during the first half of the 20th century.
- **The three Baltic States: Estonia, Latvia and Lithuania**: after WWII, these three countries became, for the next fifty years, part of USSR and thus part of the *science centre*. This fact is important in that, in practice, it shifts the focus on the attempt to elucidate their R&D sectors during the communist time, as well as during the transitional period. In both periods, the three Baltic States followed a particular path compared to the countries from the first group. The specificity of their R&D reforms cannot be understood without keeping in mind the noted differences. The Baltic countries did not found their NAS during the 19th century. This fact is also relevant when attempting to understand the specificity of their reforms of R&D sector.

³. Reasons for creating these three clusters are given under each group of countries.

⁴. and the German Democratic Republic.

German Democratic Republic (GDR) / Deutsche Demokratische Republik (DDR) (1949 - 1990)

Area	108 333 km ²
Capital city	Berlin
Population	16.4 million inhabitants (1989)
Religion	Protestants (31 %), Roman Catholics (7 %), 1% other religion/church, without religion (61 %)
Form of government	Socialist Republic
Currency	1 Mark (ost-) = 100 Pfennige

Source: Statistisches Amt der DDR (1990): *Statistisches Jahrbuch der DDR 1990*. Rudolf Haufe Verlag: Berlin in Burkhardt, 2003.

Socialist Federal Republic of Yugoslavia (SFRY) (Data as of December 1990)

Area	255 804 km ²
Capital city	Belgrade
Population	23.5 million inhabitants
Ethnic profile (1981 census)	Serbs, Croats, Muslims, Slavs, Slovenes, Macedonians, and Montenegrins (over 80 %) - Albanians (7.7 %) and Hungarians (1.9 %)
Religion (1990)	Roman Catholics (30 %), Serbian & Macedonian Orthodox (50 %), Muslims (9 %), Protestants (1 %), others (10 %)
Form of government	Socialist Federal Republic
Currency (January 1991)	US\$1 = Dinar (YD10.50)

Source: Blagojević, 2003.

- **Slovenia and Romania:** during the communist period, Slovenia was part of the Socialist Federal Republic of Yugoslavia (SFRY) and Romania was an independent nation state. SFRY was under the influence of the USSR, **but not** part of the Soviet Block, whereas Romania was under the influence of the USSR **and** part of the Soviet Block. Unlike the other Enwise countries, the political regimes of SFRY and Romania during the communist period demonstrated a kind of *separatist inclination*. The communist regime was assessed as too liberal (according to its own standards for freedom) in SFRY and as too authoritarian in Romania (again according to its own standards for freedom). In any case, SFRY and Romania resisted the adoption of the *Soviet model* of R&D, as well as that of HE. This fact also gives a clue for a better understanding of the HE and R&D sectors of Romania and Slovenia, both of which adopted during this period a mixture of Western and Soviet science *models*.

The strategic aim of these countries of the so-called *Soviet Block* was **to win the Cold War competition** under the leadership of USSR. Science and scientists from the Enwise countries had a high responsibility for the implementation of the instrumental **rationality of socialist society**. From this point of view, the communist media succeeded in building a positive public image of science in society. Scientists were no longer seen as bearers of the national cultural traditions and values (as in the previous pre-communist times), but as builders of this rational socialist society. During this period, the profession of science enjoyed relative prestige.

In 1949, the Soviet Union, Bulgaria, Czechoslovakia, Hungary, Poland and Romania founded the so-called “*Council for Mutual Economic Assistance*”, known as **Comecon**⁵. The underlying idea of Comecon was a common planning, mutual aid and division of work, including intellectual work. Comecon included a *Committee for co-operation in R&D* of the Enwise countries. However, with over 70% of Comecon’s population, the Soviet Union dominated the organisation, especially since it was the principal source of the group’s energy and raw materials. In practice Comecon was the *umbrella*, under which the entire process of research and education was *planned* and *controlled* by the USSR. During this period, the majority of the Enwise countries had been assigned specific R&D profiles by Comecon.

5. It was later joined by GDR, Albania, Mongolia, Cuba and Vietnam, as well as, in 1964, by SFRY under special conditions.

Competition East/West during the Cold War

During the communist period science was one and the same enterprise both in the Enwise countries and in Western countries, meaning that scientists from these countries participated *in one and the same competition*. Contemporary science however is a very *costly* enterprise. According to a Russian survey, “*the ratio between the material and*

technical foundation (necessary equipment) and information supply provided for Soviet science and Western countries’ science (including USA) has been 1:100 during the communist period”. If this statement is reliable then it seems that the competition was lost even before it started.

Source: Sretenova, 2003.

Under the leadership of Mikhail Gorbachev in the 1980s, the Soviets ended their economic stranglehold on Eastern Europe and Comecon's goals were shifted in 1985 to a **comprehensive programme for scientific and technical cooperation**. Instead of the previous concentration on heavy industry, priority was given to five areas, in which Gorbachev thought Comecon was severely lagging behind the West: the **use of computers, complex automation, atomic energy, new materials and technologies, and biotechnology** (Gavin, 2001: 86).

The mobility of scientists and university staff was partially developed under Comecon inter-exchange programmes and networks and completely controlled by the USSR. The management of science during the communist period, i.e. the state S&T policy including funding mechanisms and the structure of R&D, was completely subordinated to these strategic aims.

■ Structure of R&D sector in the Enwise countries

In the majority of the Enwise countries, the R&D sector had two separate sub-structures. The basic and advanced research was carried out at the scientific Academies (the National Academies of Sciences, the Academy of Agriculture, the Academy of Medical Sciences, etc.), while the applied research and technological development shaped the so-called *branch R&D* in state research institutes under the auspices of different ministries and industrial enterprises. The two sub-structures constituted the *Government R&D* sector. The NAS of the Enwise countries operated as the main **National Research Centres** (like CNRS in France or Max-Planck-Institutes in Germany⁶) and at the same time as an association of eminent scientists (Western model of academy). The NAS employed the best scientists and enjoyed some privilege. For example, the Hungarian Academy of

6. During communist times, GDR always followed the Humboldt-model, by which universities were institutions of both teaching and research.

About JINR

On 12 August 1953, the detonation of the first Soviet hydrogen bomb (an H-bomb) was carried out against the backdrop of intense competition between the US and the USSR in the atomic energy sector. In 1954 in the small town of Obninsk near Moscow, work started in the first nuclear plant in the world. In 1954, the **European Organisation for Nuclear Research** (CERN), the world's largest particle physics centre was founded. In 1955, bilateral agreements between the USSR and several of the Enwise countries were signed in Moscow. For example, in 1955 a 'secret agreement' between the USSR and Bulgaria for co-operation in the field of nuclear physics and the usage of atomic energy for peaceful purposes was signed. In this agreement, the USSR envisaged helping Bulgaria to build an experimental nuclear reactor, as well as to train Bulgarian physicists in the area of nuclear physics. In 1956, a Convention was signed in

Moscow between the USSR and representatives of the governments of some Enwise countries (Bulgaria, Czechoslovakia, Poland and Romania) plus other member states for the foundation of the **Joint Institute for Nuclear Research** (JINR), an international intergovernmental R&D organisation located in Dubna, not far from Moscow. JINR was created in order to unify the intellectual and material potential of the member states to study the fundamental properties of matter. JINR gradually changed from a purely scientific research institution into an international centre, where fundamental science, engineering and applied research were closely connected to training. According to the website of JINR: "*JINR occupies practically the same intellectual space as it did before the decay of the communist system in Europe*".

Source: Sretenova and Tripsa, 2003.

Sciences, being the principle scientific institution in the country, had the exclusive right to award scientific degrees. The NAS of Estonia, Latvia and Lithuania were subordinated to the Presidium of the Academy of Sciences of USSR, the HE institutions to the Ministry of Education of USSR.

■ Science under ideological repression

The ideological pressure on scientists and science varied across different institutional bodies (universities and scientific academies), as well as across disciplinary fields. The issue was highly dependent on the already defined strategic aims: winning the Cold War competition and building a rational socialist society. From this perspective the communist regime was more tolerant of NAS and of the governmental R&D as a whole, which was rarely the case with the universities. The reason for this *double standard* by institutional body was quite obvious. The academic staff of universities was supposed to teach, i.e. to educate the young generation of scientists and scholars. Therefore, *unreliable* academics were not to be admitted to teach the young people, especially in social sciences and humanities. Special attention was paid to the development of natural sciences (due to military interest) just in the same way as the competitor (the Western Block) did. The ideological pressure put on hard sciences was weaker in comparison to that imposed on the social sciences and humanities. The latter were supposed to back up the official party line and consequently no compromise was possible.

■ Ideological pressure and career building

In a market-oriented economy, careers in business rank first, followed by careers in politics, in arts and in sciences. During the communist past, business did not exist at all, politics had particular selection criteria and art was under control. It meant that HE and R&D were among the limited scope of available areas for careers. Because of the lack of many alternatives, HE and R&D sectors attracted the nation's *intellectual elite* of the Enwise countries.

Party membership was a precondition for a successful career building in both HE and R&D. A dual standard of assessing research quality and promotion was therefore set up. A basic principle for selection and promotion of the staff was the *class-party check up*. Members of the intelligentsia were *tolerated* by the ruling communist party because they had to pass through several mandatory *check-ups* in order to filter out those who were themselves, or their families, *foreign to the regime*. Even if such people did succeed in getting a position in university or research institutes, every step of their professional development was carefully monitored by the state party. Those deemed *unsuitable* remained at a low level in the science hierarchy until retirement. During this period, promotion to the academic ranks of Associate Professor and Full Professor required the approval of the ruling communist party.

During the communist period, the majority of teaching and research exchanges were planned within the Enwise countries and between these countries and USSR; as a group, these countries suffered collectively from relative isolation from the rest of the world. This issue of isolation is a sensitive topic, because it stems from the ruling communist regime. This issue has also to be framed in *terms of process*, i.e. in terms of time and in terms of location. It means that, at the beginning of this period, scientific isolation was more pronounced and gradually it was alleviated towards the end of the communist period. In terms of location, Slovenian scientists invariably, and Hungarian as well as Polish scientists partially (since at least the 1970s onwards) had opportunities to participate in conferences organised in Western countries. In all the Enwise countries, during the communist times, high level leading scientists, *reliable* scientists as well as the party-member *nomenclatura* met with no restrictions on their visits to Western countries.

The situation of R&D sectors of SFRY and Romania to a certain degree was not in line with the other Enwise countries. While the latter were transforming their NAS into a *Soviet type* academy, in the 1970s the Ceausescu political regime did just the opposite: the Romanian Academy of Sciences was detached from its 51 research institutes and was transformed into a Western type of academy, i.e. an association of the science elite (Glenday, 1993). This *elite* however was elected on a purely political basis.

Building upon those statements, an important question must thus be answered in this chapter: why was R&D of the Enwise countries, being so generously funded during the communist period, actually less effective when compared to that of the Western countries? Of course issues such as

Co-operation and competition in sectoral R&D: CERN and JINR, West and East poles of excellence in science

During the communist period, Comecon, the European Organisation for Nuclear Research (CERN) and the Joint Institute for Nuclear Research (JINR) were among the main pillars of directing (Comecon, JINR) or influencing (CERN) the scientific activities within R&D. CERN, one of the Europe's first joint ventures in R&D sector, and JINR were both founded to enable physicists from Western and Eastern countries to contribute to the issues of fundamental physics in ways that they could not have afforded acting separately. During this period, different Enwise countries were involved in JINR's programmes of research and education (another good example of good practice and co-operation among the Enwise countries during the communist period was the joint R&D Programme "Inter-Cosmos"). Though such programmes had to abide by communist rules, their value in bringing together a pool of specialists cannot be underestimated. Different Enwise

countries belonged or still belong to different JINR partnership systems of research and education in the field of nuclear energy. During the Cold War, CERN and JINR used to co-operate under certain programmes in complementary ways. This enabled the physicists from the Enwise countries working at JINR to have access to CERN as well. Currently the two organisations have several common member states, which was impossible during the Cold War. Nowadays, the following 20 countries are member states of CERN: Austria, Belgium, **Bulgaria**, **the Czech Republic**, Denmark, Finland, France, Germany, Greece, **Hungary**, Italy, the Netherlands, Norway, **Poland**, Portugal, **the Slovak Republic**, Spain, Sweden, Switzerland and the United Kingdom. A Cooperation Agreement between **Romania** and CERN was signed in 2002.

Source: Sretenova and Tripsa, 2003.

ideological pressure and isolation, selection mechanisms based on class-party check-ups, dual standard of assessment, etc. are relevant, but cannot answer this question comprehensively.

To do so, a closer look needs to be taken at the *science policy* of the communist period. Generally speaking, any *science policy* has five interrelated components: funding mechanisms, organisation and management, human resource potential, material and technical foundation (necessary equipment) and information supply. Looking for an answer to the above question, it can be argued that the mechanism of centralised planning of state R&D funding during the communist period contributed to the non-effectiveness of this sector, because the mechanism used to fund **working places** (headcount) rather than **the research system itself**.

How did the scientists from the Enwise countries, as well as the Russian scientists, enrolled in the *science centre*, cope with the stated research environments and infrastructure? A reliable indicator for measuring the effectiveness of communist R&D (of course not the only one) is the international rating of scientific publications, recorded by renowned international information sources, as well as by the registered citations in professional journals with a high level *impact factor*.

A reliable information source is the *Institute for Scientific Information*, Philadelphia (USA). This institute observes the scientific publications and their citations in three specialised data bases with a high rate of selectivity: *Science Citation Index* (SCI) for natural and technical sciences; *Social Science Citation Index* (SSCI) for social sciences and humanities; *Art & Humanities Citation Index* (A&HCI).

Seven steps towards international conferences... (That a Romanian scientist had to pass in order to attend)

Step 1: To receive an invitation from the organisers; to justify the personal connection and relationships with organisers (where from, how they discovered you); to declare whether or not you have relatives in the destination country or generally abroad; to have recommendation of the head of department (usually a man).

Step 2: To receive the approval from the communist party organisation in the institution in which you are working.

Step 3: To receive the approval from the person in charge of secret information (so called *Securitatea*) at the level of the institution. He (*she* was never heard) had the permission to interrogate you, to collect information about you from different sources and finally to say *yes* or *no* without any additional explanations.

Step 4: To receive the approval from the Department of External Relations from the Ministry of Education (the head of department had been nominated by Elena Ceausescu and had the task to inform her about the possible journey).

Step 5: To receive the approval of the University Party Centre of Bucharest.

Step 6: All five steps were needed in order to prepare a dossier that had to be presented to the Internal Ministry – Passport Service in order to obtain a Romanian visa.

Step 7: To receive the Romanian visa; to obtain the foreign visa from the designated country's embassy in Romania.

Source: *Tripsa*, 2003.

Following Table 2.1 gives an insight into the relative share of publications and citations of the scientists from various countries, including several Enwise countries, towards the end of the communist period.

Table 2.1
Relative share of publications and citations of scientists from various countries (1989)

Country	Relative share of publications	Relative share of citation
USA	36.81 %	50.82 %
UK	8.96 %	9.61 %
USSR	7.27 %	1.63 %
Poland	0.88 %	0.38 %
Czechoslovakia	0.76 %	0.30 %
Bulgaria	0.24 %	0.06 %
Romania	0.15 %	0.05 %

Source: *Scientometrics*, V. 1-6, N° 16, 1989.

The same source also gives an indication of the **R&D profiles and priorities** of various Enwise countries towards the end of the communist period. It proves indirectly that in two disciplinary areas, Chemistry and Physics, the mentioned Enwise countries had a *similar R&D profile* as that of the *science centre* (USSR). Further studies would be necessary in order to explore this issue completely.

During the communist regime, scientists of the so-called Soviet Block were appropriately supported financially, but were sharply restricted, politically and ideologically. After the collapse of the communist regime, scientists were given political freedom, but were deprived of much of their previous financial support. The **tragedy** of the Enwise scientists, that can be extended to the Russian scientists too, is that unlike their Western colleagues, in the course of time, they **either had funding or freedom, but never both at the same time**⁷.

The very system of R&D funding in the communist times (i.e. *supporting working places rather than the research system itself*) was not based on the principle of competition. On a personal level, this peculiarity of the funding system had several effects: all scientists were appointed on tenure positions and had a secured monthly income (salary); scientists enjoyed the *luxury* of devoting all of their time to research activities and not competing for project funding, which always and everywhere is an energy – and time – consuming enterprise. This particular situation entailed more effective work in the theoretical fields and less in the experimental fields of the R&D during that period. This *luxury* however had not always a positive impact on the effectiveness of the R&D sector as a whole: because there was no operating grant system and therefore no competition for project funding, hard work in the field of sciences was to a large extent *a matter of personal choice, commitment and interest in the research field* (as a rule, once appointed to a position in the R&D sector, a scientist could not be

7. This situation has prompted the American historian and philosopher of science, Loren Graham, to raise a question: "What is more important to science, freedom or money?" In his recent study "*What have we learned about science and technology from the Russian experience?*", he answered this question in the following way: "The sobering conclusion that we must draw, in terms of scientific results, is that the support counts for more than the repression" (Graham, 1998: 130).

dismissed for reasons of poor performance). During the communist period, the R&D sector of the Enwise countries performed relatively successfully, not because of an existing organisation and management of science and a related funding system, *but in spite of it*.

Transitional period (1990 - 1998/9)

The collapse of the communist regime in 1989 brought a high level of turbulence in the Enwise societies with the follow-up re-arrangement of their value systems, the setting-up of new agendas, the fading of old illusions and the rise of new ones. The common aim of the Enwise countries was to *return to Europe*, where *they had already been for more than a thousand years* and to a market-oriented economy and society, *which they had already developed* during the first half of the 20th century.

In order to understand the ongoing processes, one must keep in mind that all the Enwise countries were keen to return to their national pre-communist cultural traditions and to reshape all spheres of public activity in accordance with them. During the first years following the changes, the collective public mind was obsessed by the idea of going *back to our roots*. This special kind of *romantic inclination* partly explains why the Enwise countries followed different paths, when pursuing one and same common goal: the **reform** of their **HE and R&D sectors** in order to make them more effective and competitive in a democratic and market-oriented society. According to the adopted methodology⁸, and outside of the romantic inclination mentioned above, the following question has to be answered: what was the country playing the role of *science centre* for the Enwise countries during this transitional period? This is a key issue, because it concerns the transfer of HE and R&D models from the *science centre* and their follow-up adaptation and implementation in national contexts. A tentative hypothesis is that the USA played this role for the majority of the Enwise countries, in particular in relation to the adoption of HE models during this period. However, to confirm or reject this hypothesis, i.e. to show whether American or European trends dominated the reshaping of the Enwise countries HE sector, one would need a specific comparative study of the HE models of the Enwise countries, which is outside the scope of this report.

During the transitional period, the complex transformation of HE and R&D sectors in the Enwise countries passed through two different phases: the first one, from 1990 to 1995, which could be identified as a *bottom-up* driven phase and the second one, from 1995 to 1998/9, as a *top-down* driven phase. It is proposed first to analyse the transformation of R&D sectors and then that of the HE sectors (however, where relevant, the HE sector is referred to within R&D analysis as well).

8. J. Ben-David's concept about science centre and science periphery.

The transformation of the R&D sector meant a deep and sometimes dramatic change of the full-scale of its components, i.e. legislation, S&T policy, management bodies, organisational structure, institution framing, etc. The Enwise countries have again been clustered, this time in two groups, in order to avoid drawing any generalised picture that would be misleading:

- Bulgaria, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic and Slovenia, identified afterwards for short as CEECs;
- Estonia, Latvia and Lithuania, i.e. the Baltic countries.

■ The scientific community effort - Bottom-up driven phase of transformation of R&D sectors

■ In the CEECs

- *The first step* towards the restructuring of HE and R&D sectors was the improvement of legislation. The CEECs adopted new acts⁹ on HE and R&D, which aimed to restore the *academic autonomy* of both types of institutions (NAS and universities) and to restore *academic freedom*. This first step was also in line with the process of democratisation of the R&D sector and resulted in an overall *decentralisation* of the functioning of the institutional structures. The latter became *self-governing* research units. From then on, the initiative at the level of research units or even at the level of individual researchers had been launched. This step was also a kind of renewal of the national pre-communist cultural tradition, where the NAS and the universities were autonomous institutions. At that time, the R&D sector faced a sharp decrease in and a shortage of budget subsidiaries.

9. In 1990 (HE) and 1991 (BAS) for Bulgaria, in 1990-92 for the Czech Republic, in 1990 for Poland, in 1990-92 for Romania...

Reduction of R&D personnel in the Czech Republic

To demonstrate the **scope of the reduction**, figures concerning the example of the academy of sciences as the main research institution in the Czech Republic are very instructive. The total number of **research centres** has fallen from 85 to 59 and the overall number of **staff** dropped from 13 896 in 1989 to 6 972 in October 1993.

Source: Havelková, 2003.

Reduction of R&D personnel in Bulgaria

In 1989 the Bulgarian Academy of Sciences consisted of 122 research units, nowadays it comprises **68 research units** (Institutes, Centres and Labs). The total number of the research personnel in the Government R&D sector has fallen from 12 842 in 1993 to 6 387 in 2001 (i.e. a reduction of 50.2%).

Source: Sretenova, 2003.

Assessment of Polish R&D activities

In Poland, this second step was accompanied with the introduction of a peer review system: "The peer review system introduced in 1991 was based on the principle of the assessment of research and development activities by representatives of disciplines and fields of science elected in two stages by the academic community (those with a PhD and above). The review took place at a number of levels (reviewers, sections, teams).

The final review committee consisted of 12 representatives of the community and 7 ministers nominated by the Prime Minister. Thus, the assessment included a political element, as the relationship between research and current policies of the government and of individual ministers was taken into account".

Source: Oleksy, 2003.

The situation, as it was, suggested a kind of *adaptation strategy* undertaken in all post-communist NAS (Government R&D) and led to the second step of the restructuring of R&D.

- *The second step* towards the restructuring of the R&D sector was related to the drastic reduction of R&D personnel in most CEECs. The NAS of the Enwise countries, on the basis of their new legal status of independent self-governing research institutions, reformed their structures in order to *optimise* the number of their research units and the number of their R&D personnel.

In the CEECs, the process of the reduction of R&D personnel went in parallel with a process of assessment of research and development activities at different levels – starting with the individual researchers and ending with the research organisations as a whole.

- *The third step* towards the restructuring of the R&D sector was related to the introduction of new funding mechanisms for R&D on the basis of a grant system. NAS as the main representatives of Government R&D in the majority of the CEECs, with the exception of Poland and Slovenia, still received their budgets **directly** from the state (as it was during the previous period) and then distributed the money to the individual institutes. The related boxes show that the newly shaped grant agencies and foundations for financing the research activities on the basis of competition are more or less additional sources of funding for R&D in CEECs. Some innovative private non-profit R&D¹⁰ emerged outside the Government R&D in Hungary and Poland respectively.

10. According to the Frascati Manual, the R&D activities are heading under the four sectors of economy: Higher Education sector (HES), Government sector (GOV), Business and Enterprise sector (BES) and Private non-profit sector (PNP).

New funding systems in the Slovak Republic

In the Slovak Republic, 0.59% of GDP in 2002 was allocated to the R&D sector, from which 0.30% of GDP was financed from the state budget.

The special state bodies - Agency for Science and Technology and VEGA (Scientific Grant Agency) deliver research grants on the basis of competitions. The annual support offered by these two granting bodies should be considered as additional income towards the budget of the Slovak Academy of Science, which is financed mainly from the state budget.

Source: Velichová, 2003.

New funding systems in Poland

In Poland, the Ministry of Scientific Research and Information Technology distributes funds to the Polish Academy of Sciences and other R&D institutions that it supervises. R&D institutions may also have their own sources of funds, for example they conduct research for which they take grants commissioned by other parties.

Source: Oleksy, 2003.

New funding systems in Hungary

In Hungary governmental R&D financing constitutes about 65-70% of the total funding of the Academy and the universities. The grants awarded by different governmental granting bodies such as OTKA (Scientific Research Fund), MÜFA (Technological Development Fund) and NKFP (National Research and Development Programme) make up the majority of this funding.

Source: Groó and Papp, 2003.

New funding systems in Bulgaria

In Bulgaria the subsidy from the state budget comprises about 80% of the income of the Bulgarian Academy of Sciences and the grants from the National Research Fund (a state body, which deliver grants on the basis of competition) is about 3% annually.

Source: Sretenova, 2003.

- *The fourth step* towards the restructuring of the R&D sector was related to the gradual emergence of the HE R&D sector, i.e. *research activities developed in HE institutions*, which either was lacking or had been neglected during the previous period. The introduction of new mechanisms for financing research activities had a positive impact on the initiation of university research, because research became one of the additional sources of funding. However, the newly established research centres affiliated with the university departments emerged as autonomous structures in terms of state funding. The former divide between teaching and research activities became somehow particularly reproduced within the HES of R&D itself. Evidently, despite the efforts, the *Soviet R&D model applied* for nearly half a century in most CEECs could not be easily overcome. More time is needed for vital integration of the research activities within the universities than initially was expected.

During this phase, most CEECs adopted new laws for higher education and in relation revised their systems of scientific degrees¹¹. In Hungary, the universities got back their right to award the academic degree of PhD (In Bulgaria, Czech Republic, Poland, Romania, Slovak Republic and Slovenia, the universities had always had the right to award this degree, even during the communist period).

The CEECs passed through almost the same first phase of transformation of their R&D. All of them preserved their NAS (in a reduced form) in accordance with their national cultural traditions. The separation between research and teaching activities still exists in some of these countries. NAS still receive *direct funding* from the state budget (with the exception of Poland and Slovenia). In addition, these countries have preserved the former two-level system of scientific degrees, with the exception of Romania and Slovenia, where this system was never introduced.

11. An insight in the hierarchical structure of scientific degrees system and academic titles/ranks within HE and R&D in the Enwise countries can be found at Annex 3 of this report.

Slovenian good practice

Since 1985, Slovenia introduced a special funding scheme for young scientists for Masters and PhD studies. The Slovenian government is also trying to stimulate applied research by offering to research

institutes and university support for projects that already obtained commitment for partial funding from industry.

Source: Mladenič, 2003.

Private non-Profit R&D in Hungary

The Bay Zoltán Foundation is the largest research foundation in the country. It was founded in 1993 by the National Committee for Technological Development and it has three research institutes: the Institute of Biotechnology, the Institute of Material Science and Technology and the Institute of Logistics and Production Engineering. It is financed by grants, R&D contracts and interests (non-governmental funding).

Source: Groó and Papp, 2003.

Private non-Profit R&D in Poland

In Poland, following the introduction of a market economy, private R&D institutions came into being, and independent branch institutes were established. New, autonomous research centres, such as the A. Smith Institute in Warsaw or the Case Foundation, were also set up. The institutions mentioned here are set up as foundations, thus they are financed by private funds. They describe themselves as independent, private, non-commercial, non-profit institutions.

Source: Oleksy, 2003.

A reflection upon this first phase of transformations of R&D in the CEECs reveals some deficiencies. The re-building of the R&D sector in these countries started without an elaborated national strategy or at least a vision for the long-term development of this sector and as a consequence this brought some loss. In particular, the so-called *branch R&D* was the most negatively affected by the reforms and in fact was **completely dissolved** in the majority of CEECs, with the exception of Hungary.

■ In the Baltic countries

As a group Estonia, Latvia and Lithuania inherited quite a developed R&D sector from the former USSR. However, this sector was tailored to serve the needs of the large Soviet Union. As a consequence, their former advantages turned into disadvantages, because in the transitional period to market economy, this R&D sector could not sustain its capacity and had to be reduced to match the opportunities and needs of a small independent country: it had not, however, been designed for this purpose. From this point of view one can understand why the transformation of the R&D sector of the three Baltic States was **more radical and more dramatic** compared to that of the CEECs. Generally speaking, the formal pattern of transformation of R&D sector, in the Baltic countries, was the same. However, the content and the context of this formal pattern were different compared to that of the CEECs. A comparison between the Baltic countries and the CEECs is presented hereafter, which focuses attention on the differences of their transformation processes.

- *The first step:* The three Baltic countries created a new legislative basis targeted at their R&D¹² sectors. The new legislation on research activity adopted by the Baltic countries during the first phase of transformation of the R&D sector re-established not only the principle of autonomy but also founded the basis for integration of the research activity into universities. At that time, the CEECs focused their attention on the creation of a legislative base for transformation of the HE sector.
- *The second step:* In 1994, Estonia transformed its *Soviet type* Academy of Sciences into a Western type academy, i.e. an *association of eminent scientists*. The same happened to the Latvian and to the Lithuanian Academies of Sciences. The former research institutes belonging to these academies (17 research institutes belonging to the Estonian AS, 18 belonging to the Latvian AS and 19 to the Lithuanian AS) faced a different fate: part of them were closed, part of them became independent state research institutes under the auspices of the respective Ministry of Education and/or Science and part of them were integrated into the respective universities.

Changing the law in Slovenia

Slovenia was maybe the only country in CEECs, which during this phase focused attention on promoting R&D legislation as well. A law on research activity was passed in Slovenia in 1991 as well as several acts on funding national research programmes in 1994.

Source: *Mladenič, 2003.*

12. Estonia: "Organisation of Research Act" (1994) and "Universities Act" (1995), Latvia: "Law on Research Activity" (1992), Lithuania: "Law on Research and Higher Education" (1991).

Therefore, the main difference between the transformation of R&D of CEECs and that of the three Baltic States is that, while the latter preserved their NAS, which still function as public **governmental** research organisations, the three Baltic countries transformed their NAS into public **non-governmental** organisations. As a consequence, the three Baltic countries, unlike the other Enwise countries, **completely** transformed their previous governmental R&D sector.

- *The third step:* The three Baltic countries transformed the structure of research financing in a **radical way**, i.e. completely. For example in Estonia, the *Estonian Science Foundation* (ESF) and the *Innovation Foundation* (now part of the *Enterprise Estonia Agency*, EAS) were established in order to **cover the financing of all stages of R&D**. An entirely new grant system was introduced as an instrument for promoting S&T policy in a competitive way.

- **The policy makers' effort – Top-down driven phase of transformations of HE and R&D sectors**

This phase aimed to shift the focus towards defining national priorities, needs and opportunities of the Enwise countries at the level of the respective ministries supported by the newly shaped advisory bodies. During this second phase, Hungary seemed to be the most successful in changing the structure of financing research and displayed a **growing share of its R&D budget in the private sector**. This was not the case in the other CEECs. During the same phase, the three Baltic countries¹³ revised their respective R&D legislation as well as the mechanisms of financing their research institutes. From 1995 to 1998, the three Baltic States¹⁴ integrated the research institutes, formerly belonging to their NAS, into the universities. However this integration appeared rather as a formal process than as a real integration, because the state research institutes are still legally independent units within the university framework.

- **Decreasing public image of science and scientists in the transitional society**

Most members of the Enwise Expert Group claim that low investment in science, poor research environment and infrastructure, and low salaries for scientists contribute to the withdrawal of scientists from the profession. These reasons, however, tell part, not all, of the story. Other reasons for the fading prestige of science and scientists might be that, firstly, during the transitional period, the defined strategic aim disappeared. It means that science and scientists from the Enwise countries were no longer in charge of the great responsibility which previously was to win the Cold War and to build the rational socialist society. Secondly, during this period, prospects for new attractive careers outside the R&D sector emerged. The period offered new horizons and a completely new intellectual landscape for personal creative activities and initiatives. In this context, the **new media** lost any interest in building the public image of science and scientists in society, because they had also their new priorities and agendas.

13. Some details of R&D transformations in the three Baltic countries are presented in Annex 4 of this report.

14. In Lithuania, two types of state research institutes can still be found: university research institutes, included in the university framework and state research institutes, independent of the university.

■ **From legislative reform to implementation: HE reform in the Enwise countries**

In the transitional period, the transformation of the educational system in the Enwise countries reflected fundamental social and economic processes. Education as a main source of qualified labour power had to respond to the new challenges of life. The basic factors that imposed the reform of the educational systems during this period were connected with the transition to market economy and significant changes in the institutional, economic and social infrastructure.

Many of these changes were generally marked by the same rhythms as the social and economic reform: hesitation and slowness and attempts to overcome existing blockages, which were threatening to turn into a crisis, through simultaneous reforms in each and every education sector. Different surveys dealing with the reform of education, after the fall of communism in the Enwise countries, identify **2 main phases**, with specific goals and results:

- Phase of *transition* (1990-1995) that could be called phase of *identifying the needs and building up the context of legislation*, which included the following specific stages:
 - **deconstruction** (1990) characterised by the elimination of the ideological indoctrination from education and, in general, by the elimination of the restrictions inflicted by the communist educational policy; one of the most important steps of that time was the generation of new legislation¹⁵ for HES, allowing for university autonomy;
 - **stabilisation** (1991/92), considered as a stage of consolidation, after the tempestuous changes that took place after the fall of communism; the issues of democratisation and decentralisation are relevant for this stage.
- Phase of *comprehensive or accelerated reform* (1995-1998/9), accompanying the **enlargement process** and consisting of changes catalogued in six chapters: the curriculum reform (educational planning, programmes, textbooks) and European adjustment of the national curriculum; the transition from learning by rote to problem solving learning and **re-launching of university scientific research**; a new connection between schools, high schools, universities and their economic, administrative and cultural environment; school and academic management reform through decentralisation; increase of the educational institutions autonomy; infrastructure improvement and connection to world communication lines; and advanced forms of international co-operation.

15. An overall review of the laws on HE adopted in the Enwise countries can be found at Annex 5 of this report.

New legislation on HE in the Enwise countries

Important issues came out through the new legislative processes adopted during the transitional period, such as: the elimination of the political factors in the process of education; university autonomy; the development of private education as an alternative for public education; the accreditation of the HE institutions; the necessity of quality standards for HE sector; the implementation of new curricula in HE

institutions increasing the interest of integration of the research activities into these institutions; re-introduction of research achievements as standard career criteria in HE; the introduction of the grant system with the possibility to finance research university projects; the *numerus clausus* has been maintained and interested students must pass admission tests.

Source: from the various members of the Enwise Expert Group.

Each of these two phases triggered differentiated processes with the following consequences:

- The **number of universities** - state and private educational institutions - has increased; the development of this double system of higher education, namely state and privately owned institutions, should be underlined in all the Enwise countries. Table 2.2 below shows the current number of HE public and private institutions in the Enwise countries. Their increase can be partly explained by the new private sector, which did not exist before 1990, with only one exception: the Catholic University of Lublin in Poland.

The diversification in the ownership of the education system created more competition between providers, who faced new challenges for quality and innovation in the system. These private initiatives also triggered diversification in the educational offer, providing the students with a wider choice of programmes.

Table 2.2
Public and private universities in the Enwise countries (2002)

Country	State institutions	Private institutions
Bulgaria*	37	5
Czech Republic	26	30
Estonia	6	4
Hungary**	55	34
Latvia***	20	13
Lithuania	19	7
Poland	105	277
Romania	56	18
Slovak Republic	21	2
Slovenia****	3	8

Source: from various members of the Enwise Expert Group.

Notes: * In Bulgaria, in addition to these 42 universities, there are 48 Colleges (of which 6 are private)

** Hungarian data for 2001

*** In Latvia, among the 33 HE institutions, 5 of them are state universities

15 are state higher education establishments and 13 private higher education institutions

**** In Slovenia, among the 8 private institutions, 5 are faculties and 3 HE institutions

- The **number of university students** – both male and female – has increased. The structure of the relative share of students in the **different fields of studies** shows a certain correspondence between the demands of the changing labour market and related economic reforms. Nowadays, students' preferences concern mostly disciplines such as: business and administration, engineering, law, economics and social sciences,

Increasing number of university students in the Enwise countries

In some of the working documents 2003 provided by the members of the Enwise Expert Group, the following figures are reported:

- Bulgaria: the number of students increased from

116 407 in 1987 to 247 006 in 2000/2001;

- Hungary: in 1989/90 the number of students' enrolments reached 100 868; by 1997-1998 this number had climbed to 233 657 and reached 313 238 in 2001/2002;

- Lithuania: the number of students decreased from 67 312 in 1990/91 to 51 482 in 1994/1995, and increased to 95 593 in 2000/2001;

- Romania: in the 1990-1997 period, the number of students rose to 168 000 students in HE public and private institutions, representing the double of the figure for 1990;

- the Slovak Republic: in 1989/1990 the number of students reached 63 466 and climbed to 131 088 in 2001/2002, while the number of female students has been over half of the total study body since the academic year 1997/1998.

while there is a declining interest in mathematics, natural sciences and physics. There is a tendency to choose soft sciences, the result of which is that there are many graduates in this area and not enough in hard sciences. In addition, there is no effort made to encourage girls to take an interest in technological universities and computer sciences.

- **Computer science** has become more popular among students, even though the Slovenian case indicates a different trend: while in former Yugoslavia 40% of students in this discipline were women, during the transition it dropped to less than 10% of women. But this trend cannot only be explained as a *reaction to the science system established during communist times*, since these kinds of students' preferences can be understood as common to both post-communist and Western countries. Hard sciences lost their attractiveness for young generations as they did in the West. It can be concluded from the various data collected by the members of the Enwise Expert Group that, in **engineering and technology**, the success of women in receiving a Master's degree is noticeably higher than for men.

The situation is quite the reverse in the **humanities fields**, where men are more successful than women. Presumably the **demand of the labour market** plays an important role here. As women researchers in humanities often cannot find jobs straight after graduation with a Bachelor's degree (BA), they are likely to continue their studies at Master's level (MA). The situation concerning the professions of engineering and technology is the following: the demand of the labour market for male students is high, hence most of them quit Master's programmes without defending their theses, since they have already secured employment during their studies. Women students are apparently not so favoured on the labour market and their success rate in defending their theses is therefore much higher. However, the shift from an elitist to a mass university system is not satisfactory due to budgetary constraints, which create problems in recruiting teaching staff, satisfying students' demands and implementing the structural reform of the university.

Distribution of students by field of study

In the working documents 2003 provided by some members of the Enwise Expert Group, the following figures are reported:

- in Bulgaria: during the period 1990-2002 the following specialities were and still are the most attractive for Bulgarian students: Business and administration, Law, Economics and Social Sciences. The structure of students by field of education in 2001/2002 shows the following picture: 21.9% involvement in Business and Administration, 17.5% in Engineering and Engineering trades, 12.9% in Social and behavioural Sciences, 9.4% in Educational Sciences, 7.3% in Humanities, 5.3% in Law, 1.6% in Physical Sciences, 0.5% in Mathematics, 0.6% in Life Sciences, etc.;

- in Romania: the same trends were observed as in Bulgaria;

- in Estonia: in relation to certain fields of study, several interesting trends can be noticed regarding the success of master's studies as well as the gender-balance of students. In Humanities, the total number of women accepted is almost three times the number of men, but in defending their theses, men are more successful. Of those accepted onto the Master's programme, every fourth woman and every third man defend their theses. Engineering and technology are strongly masculine fields, where men are four times more present than women, but the success in defending among men and women is equal (every fourth).

- The proportion of women in the university staff had increased by the end of the transitional period, achieving a significant percentage, as revealed in Table 2.3 below.

Table 2.3
Female participation in university staff as a % age
of the total university staff in 9 Enwise countries (1999)

Country	Female teaching staff (%)
Bulgaria	40.2 %
Czech Republic	31.7 %
Estonia	43.7 %
Hungary	53.6 %
Latvia	78.6 %
Lithuania*	31.5 %
Poland	45.2 %
Romania	35.1 %
Slovak Republic	39.0 %

Sources: Enwise Expert Group working documents.

Note: * = only having a scientific degree or an academic title

Although women constitute a significant proportion of graduates of different schools of HE as well as occupying a significant proportion among the university staff, the ones with a successful university career are much fewer. Additionally, career development is also strongly dependent on the field of study. At the end of the transitional period, a gender vertical segregation in HE has to be underlined as can be observed in following Table 2.4.

Table 2.4
Share of women from the Enwise countries in HE positions
at the end of the transition period (1999)

Country	Full professors	Associate professors	Assistant professors	Lecturers
Bulgaria	16.4 %	30.7 %	44.4 %	56.5 %
Czech Republic	7.2 %	20.0 %	41.6 %	56.4 %
Estonia	16.5 %	31.6 %	50.9 %	68.0 %
Hungary	11.6 %	33.0 %	40.0 %	Unknown
Latvia	18.0 %	40.0 %	43.0 %	68.0 %
Lithuania	11.6 %	33.1 %	*	Unknown
Poland	15.5 %	21.7 %	20.9 %	38.8 %
Romania**	10.2 %	32.0 %	45.0 %	Unknown
Slovak Republic	8.0 %	25.0 %	48.0 %	Unknown
Slovenia	10.0 %	15.0 %	20.0 %	Unknown

Source: Enwise Expert Group - Working documents 2003 and WIS database.

Notes: * in Lithuania, the title Docent corresponds to both Western Associate & Assistant professors

** taking into account only 10 of the main state universities in Romania

The university staff duties in the field of teaching increased as a consequence of the increasing numbers of students, which does not facilitate extending the research capacities in universities. Taking into account the high percentage of women at the positions of lecturer and/or assistant professor, the situation suggests that the majority of university

women are used as *workers of education* with little space left for their research. Furthermore, combined with their **low remuneration**, this situation is both profitable for the university system and meets the social demand of universities, namely, to provide increasing services under conditions of **stagnating funding**.

Funding of education and investment policy are other essential issues and constitute a prerequisite for access to education. University research in the period of transition remains a special problem. The system of duties is still unclear and sabbatical years are recognised, but too little used.

The number of women in leadership positions in HE institutions is still very small as can be seen in the data concerning the position of university rector in Table 2.5 below.

Table 2.5
Gender distribution of HE rector positions in the Enwise countries

Country	Women	Men
Bulgaria*	1	41
Estonia**	1	56
Hungary***	8	57
Latvia****	1	4
Poland*	24	255
Romania*	1	45
Slovak Republic * & *****	0	23
	15	63
Slovenia*	1	2

Source: *Enwise Expert Group - Working documents 2003.*

Notes: * University Rector
 ** Estonian Academy of Sciences
 *** Number of rectors at universities and colleges in Hungary
 **** In Latvian universities, there are 1 woman and 4 men in rector positions (in table); in other state higher education institutions, there are 2 women and 13 men in rector positions and in the private sector, 5 women and 8 men hold rector positions
 ***** University vice-rectors

■ HE Reform and Enlargement process

During the period following 1998/9, the Enwise countries adopted a *policy of integration to the European Union*. The evolution of intrinsically *linked processes*, during the enlargement period in the Enwise countries allows for a three dimensional analysis of the roles played by the **European Commission**, the **state-level governments** and the **HE institutions** to achieve the common goal of EU integration:

- **European Commission:** The **Sorbonne declaration** of 25 May 1998, stressed the universities' central role in developing European cultural dimensions. It emphasised the creation of the European area of higher education as a key way to promote citizens' mobility and employability and the continent's overall development. On the other hand, the Commission opened the doors of its research programmes to the universities of the Enwise countries, starting with FP5 and continuing much more with FP6.

- **State-level governments:** 29 European countries, including the Enwise ones, aiming to reform the structures of their higher education systems in a convergent way, signed the so-called **Bologna Declaration**, a joint declaration of the European Ministers of Education (19 June 1999). It is a key document, which marks a turning point in the development of European higher education. The fundamental principles of autonomy and diversity in HES already obtained by the national legislations are completely respected. The Declaration recognises the value of coordinated reforms, compatible systems and common action.
 - **HE institutions:** national strategies were elaborated in the Enwise countries and real comprehensive reforms in HE began.
- **Challenges facing HE and R&D sector during the transitional period**
 During the transitional period, HE and R&D sectors of the Enwise countries met with four main challenges: shortage of funding, low salaries, brain drain and ageing issues. Each of these challenges has a specific gender dimension: the relationship between gender, funding and salaries will be further discussed in Chapter 3.
- **Shortage of funding**

By looking at R&D expenditure as a percentage of Gross Domestic Product (GDP) during the transitional period, it is possible to examine the trends in R&D expenditure in each national economic context. In the eight Enwise countries for which data are available, there was decline in Gross Domestic expenditure on R&D (GERD) as a percentage of GDP between 1992 and 1996, although the situation starts to pick up again after 1996 as can be seen in following Table 2.6:

Table 2.6
R&D expenditure as a percentage of GDP, selected years between 1992 and 2001

Country	1992	1995	1996	1997	2000	2001	%age change between 1992-1996	%age change between 1997-2001	Difference in R&D expenditure as a %age of GDP between 1992-1996	Difference in R&D expenditure as a %age of GDP between 1997-2001
Bulgaria ⁽¹⁾	1.64 %	0.62 %	0.52 %	0.51 %	0.52 %	0.47 %	-62.0 %	-8.0 %	-1.12 %	-0.04 %
Czech Republic	1.72 %	1.01 %	1.04 %	1.16 %	1.33 %	1.30 %	-41.0 %	12.0 %	-0.68 %	0.14 %
Estonia	:	:	:	:	0.66 %	0.78 %	:	:	:	:
Hungary	1.05 %	0.73 %	0.65 %	0.72 %	0.8 %	0.95 %	-30.0 %	32.0 %	-0.40 %	0.23 %
Latvia	0.59 %	0.53 %	0.47 %	0.42 %	0.48 %	0.44 %	-10.0 %	5.0 %	-0.12 %	0.02 %
Lithuania	:	0.46 %	0.52 %	0.56 %	0.6 %	0.69 %	:	23.0 %	:	0.13 %
Poland	0.83 %	0.69 %	0.71 %	0.71 %	0.67 %	0.68 %	-17.0 %	-4.0 %	-0.12 %	-0.03 %
Romania	0.85 %	0.80 %	0.71 %	0.58 %	0.37 %	0.39 %	-6.0 %	-33.0 %	-0.14 %	-0.19 %
Slovak Republic	1.80 %	0.93 %	0.92 %	1.09 %	0.65 %	0.64 %	-48.0 %	-41.0 %	-0.88 %	-0.45 %
Slovenia	1.91 %	1.61 %	1.36 %	1.35 %	1.46 %	1.57 %	-16.0 %	16.0 %	-0.55 %	0.22 %

Source: Eurostat, S&T statistics. Data for Slovak Republic from Velichová, 2003.
 Notes: (1) Break in time series 1996 and 1999 - : = non available

Matters started to improve for the Czech Republic, Hungary, Lithuania and Slovenia during the period 1997-2001. In Bulgaria, Latvia, Poland, Romania and the Slovak Republic there is no evidence of an improvement in R&D as a percentage of GDP in the late 1990s. Bulgaria experienced the sharpest decline in R&D as a percentage of GDP – from 1.64% in 1992 to 0.47% in 2001 – nearly 1.2% of GDP and Hungary had the most stability with a small decline of 0.1% of GDP during the same period. Further consequences of these trends are analysed in Chapter 3.

■ **Low salaries in HE and R&D sectors**

The low level of salaries gives rise to a new phenomenon of **double employment**, or even of triple employment, of the academic and research personnel of the governmental HE and R&D sectors. It is a public secret that even the lowest salary within the private sector and state administration exceeds the highest one within the HE and R&D sectors. The phenomenon of double employment became possible because of the increasing number of universities and equivalent higher education institutions and the corresponding increase in the number of students during the transitional period.

■ **Brain drain in the Enwise Countries – Mobility or Loss?**

The exodus of researchers during the last decade was a real challenge for R&D sectors of both EU Member States and the Enwise countries. Researchers' brain drain is one of the key concerns because a substantial public capital had been invested in their training with supposed benefits for research to be brought back to society. EU talents and skills are drained towards the USA and to a lesser extent to Canada and Australia, while the human resources from the Enwise countries are drained towards the EU Member States, the USA, Canada, Australia and South Africa.

The brain drain issue is a phenomenon of complex and complicated nature. It is difficult, if not impossible, to measure brain drain in statistical terms, because one cannot know in advance the individual plans and life scenario of each mobile researcher – to return home, to stay permanently in the host country or to move on to another country. Therefore a potential risk that the temporary international mobility will turn into brain drain always exists in each individual case. The current situation suggests shifting the focus from the aim of **measuring** brain drain to that of **understanding** the issue of brain drain, i.e. to identify factors that motivate researchers to emigrate. The main factors, which underlie personal choices for emigration of researchers from EU and Enwise countries, are similar, although some important differences exist too, because migrant scientists and researchers form a special group with shared values. Within this group, social factors leading to brain drain matter as much as the economic factors.

- Why it is so easy to attract scientists, in particular from the Enwise countries, to work abroad?

As it is well-known, opportunities are the driving force behind human behaviour. It is very important to understand why mobility opportunities too often mean for EU researchers a one-way ticket to the USA and for researchers from the Enwise countries a one-way ticket either to the EU and the USA, directly or, indirectly, following a temporary stay in the EU. Generally speaking migration of working populations as a whole strongly depends on political, social, economical and geographical factors. Researchers and scientists however shape a special group for which different motives trigger off the migration process. Traditionally, scientists and researchers have a special personality or a specific profile and their world view differs from that of other groups. As a special group, they value firstly the quality of the research system and its environment; secondly the notion of freedom, in particular academic freedom; and thirdly, unlike other migrants, this group is able to overcome the cultural and linguistic barriers of their host society. In their value system, research conditions, working environments and practices are of high priority, i.e. existing facilities, developed research infrastructures, effective work organisation, possibility of publishing scientific results, etc.

However discourses on mobility seem to have different contexts in the EU and in the Enwise countries. In EU Member States, they seem to be related to topics such as flexible structure of career paths and salaries, promotion prospects within the career, opportunity for obtaining permanent position at the home higher education and research institution, the shaping and functioning of the post-doc system in the respective country, the diversity of the *return scheme grants*, satisfaction, stability, etc. In the Enwise countries, discourses on mobility appear as a personal choice between two options - *frozen brain* at home or *brain drain* to foreign countries. It is not a major surprise then, that most of the brilliant and skilful scientists (be they junior or senior ones) prefer the mobility option and in fact a *nomadic style of life* in order to be able to practice their profession in an effective and productive way. Recognition in the profession is also important for them as it is for every other scientist in the world. One cannot make a name for his/herself, working in a small country in the research periphery of Europe, with limited access to the international professional community and correspondingly to limited opportunities for publishing in the most prestigious international journals in their field.

The conclusion which draws from the picture outlined above is that the economic factor by itself (the current unfavourable economic situation of the Enwise countries and researcher's poor salaries) can tell only half of the story about the exodus of researchers and about their motivation for leaving their countries. No doubt, the economic factor is important - at the same time quite a well studied part of the question -, but it cannot be

considered the sole explanation of the brain drain issue in the Enwise countries. The quality of the research system ranks first, as a priority factor, followed by the quality of life in a broader sense. As already said one of the reasons for scientists to leave their home country is that they are fed up with local frustration and the complexities of the environment.

- **Counter productive flexibility of women researchers from the Enwise countries**
All Enwise countries (with the exception of Slovenia) currently face a brain drain problem. It might be claimed that the situation is suggestive for reflection in terms of **brain loss** (both internal and external) instead of **brain circulation**.

The analysis supports the following tentative hypothesis: in the majority of the Enwise countries the *external & internal brain waste* dominates over the *external & internal brain drain*. The current situation rather raises more concerns about each country's *loss of intellectual human capital* than for *actual brain drain* process.

Several members (Estonian, Lithuanian, Slovenian...) of the Enwise Expert Group explicitly stated that once a woman is in research, she tends to stay, because she has already invested a lot, and there are not that many alternatives. It means that women researchers who are leaving science should be considered as *brain loss*. As underlined in Chapter 1, women in the Enwise countries facing difficult economic situations are inclined to accept a job below their qualification and in general to work for lesser wages, which is rarely the case with their male counterparts. This flexibility of attitude towards the labour market in fact makes them prospective emigrants.

The four Ps ... that highlight the brain drain issue

A sarcastic view of the problem has been developed (not by me) for graduates and those in higher positions, represented by three Ps: **Prestige**, **Payment** and **Pleasure**. Out of three Ps, you should always find two on your side. The three possible combinations show a rough spectrum of the categories in which the graduates can be placed. I will add a fourth P: **Policy/Politics**, which is on a different level and regulates the relations between the three Ps. It is always important for a graduate to define his/her place in relation to the political environment (...). *The Ps are highly metaphoric, of course. Prestige does not only mean scholarly recognition, but also an attractor for investment or further accumulation of excellence; Payment is a cipher for all kinds of material rewards, social benefits, pension plans and the material environment of a working situation; Pleasure is the*

most difficult to explain, because it includes individual private interests, care for others, moral and aesthetic categories and everything that adds to a 'good life'. None of these categories is 'pure'. However, the three Ps are indicators for the main aspects which refer to the interdependence between the individual and the system. The fourth P is self-explanatory. But it has two sides: a subjective one, where the individual 'brings about' a political impact by deciding whether to stay or to leave, and the objective one, by which one person may be forced to stay or to leave. They are decisive for relevant choices in a professional career.

Source: Professor Dr. Michael Daxner, University of Oldenburg, Germany, speaker and participant in the Enwise workshop "Starting a debate with women scientists in the Balkan region", Brussels, November 2003.

■ Ageing of academic and research staff

As shown in Chapter 1, during the transitional period in the Enwise countries, young women's life strategies have changed, they get married later and have fewer children. According to Eurostat, the population of the Enwise countries is decreasing. A negative natural growth (deaths outnumbering live births) has been registered for all the Enwise countries without exception (Eurostat, 2002). This visible trend towards negative figures of the demographic indicator *Natural increase of population* affects all sectors of public activities, including HE and R&D sectors. The ageing of the HE and R&D personnel with scientific degree is a multi-facet phenomenon with different ingredients such as low demography, policy of retirement (the pension system), policy of recruitment of young scientists, policy of scientific promotion, remuneration, public image of science and attractiveness of research careers, etc.

The ageing of the **R&D personnel** with scientific degrees is to be observed in most Enwise countries. In Bulgaria, in the academic 2001/2002 year, about 27% of full professors are 60 or older and nearly 50% are at the **age of retirement**, and only 2.4% are under 50. The group of young scientists (until 35) is 14.5 per cent out of the total academic staff. The *research ageing* trend is also visible in the R&D sector of Romania, where, in 2000, about 60% of the total R&D personnel belonged to the age group 40-60. At the end of 1996, the average age of Latvian active researchers with scientific degrees was 54.5. In the Czech Republic, Estonia, Hungary and Slovenia, low demography combined with the shortage of funding of the GOV R&D sector, on the one hand, and the opportunities offered by the private sector, on the other hand, caused a reduction in the attractiveness of the scientific career for young talented people.

During the transitional period, HE and R&D sectors faced the following questions: *Is it possible to replace the highly qualified academics leaving the system? How to attract talented young academics to be researchers?*

Concluding remarks

The analysis of the transformations of R&D and HE sectors in CEECs and in the three Baltic states reveals some common difficulties, which therefore can be taken to apply to all Enwise countries and summarised as follows:

- The effort for re-integration of research activities in universities, i.e. the building of R&D Higher Education sectors (HES) is rather more formal than effective, because the newly established research centres affiliated with the university departments emerged as autonomous structures in terms of state funding. These research centres allow academics to focus exclusively on research without any teaching duties. The former divide between teaching and research activities became somehow *particularly reproduced within the HES of R&D itself*.

What is a *healthy* research institution... age wise?

"One research institution could be considered to be in a *healthy* situation with a promising future if the number of junior research scholars per senior scientist, exceeds 3. The present case in Bulgarian HE institutions where the ratio is less than 1.5, could be considered as catastrophic".

Source: Velev, 2002 in Sretenova 2003.

- In HE sector, there is a move from an elitist university system to a mass model, which currently seems to affect negatively the quality of teaching and the existence of research activities within HE institutions.
- In HE sector, low demography accompanied, on the one hand, by the flow of graduates to the USA or to EU universities and, on the other hand, by the growing numbers of universities, resulted in **decreasing competition for admission to higher education** with a series of consequences.
- In R&D sector, low demography accompanied by the existing **complicated and outdated system for scientific promotion**, and with the loss of human intellectual capital, might create a real problem in relation to the passage to a new generation of scientists.
- In most Enwise countries, the reduction of their R&D personnel during the transitional period was about 50 per cent. From this point of view the Enwise countries face a real problem, i.e. the new EU member states are **unlikely** to be in a position to **participate fully** in the **3% Barcelona objective** until 2010. The expected scenario for the future of the Enwise countries is even worse. It might happen that the human resource research potential of these countries drops below the required critical mass, which would undermine their competitiveness and the very opportunity for further integration into ERA.

The 3% Barcelona objective

In March 2002, the Barcelona European Council adopted the objective to increase the average research investment level from 1.9% of GDP today to 3% of GDP by 2010, of which 2/3 should be funded by the private sector. To reach this objective, research investment in Europe should grow at an average rate of 8% every year, shared between a 6% growth rate for public expenditure and a 9% yearly growth rate for private investment. More and adequately skilled researchers will be needed in

Europe in order to attain the targeted increase of investment in research by 2010. Increased investment in research will raise the demand for researchers: about 1.2 million additional research personnel, including 700 000 additional researchers, are deemed necessary to attain the objective, on top of the expected replacement of the ageing workforce in research.

Source: European Commission, 2003d.



3.

The bees and the honey

Women in scientific professions in the Enwise countries

Introduction

One of the first and major achievements of the Helsinki Group on Women and Science, and in particular of its sub-group of Statistical Correspondents¹ established in 2000, has been the collection, compilation and analysis of sex-disaggregated data at national level. This followed recommendations of the ETAN report (Osborn et al., 2000), which highlighted the lack of data to support the arguments concerning discrimination facing women in scientific careers. This resulted in the first publication of statistical profiles for 30 countries in the Helsinki Group report on “*National Policies on Women and Science in Europe*” (European Commission, 2002). This strong partnership between the Statistical Correspondents and the Commission was further deepened and has produced a wide range of qualitative and quantitative information on the different national situations of women scientists, which resulted in the “*She Figures 2003*” (European Commission, 2003b), the broadest collection of statistical information currently available².

It should be noted that both the availability and the quality of sex-disaggregated data in the Enwise countries are largely superior to that of the EU-15 Member States. This can be explained by the fact that, in the perspective of the EU enlargement, the Enwise countries had to adapt their national statistical systems to Eurostat standards and requirements.

The data analysed in the first part of this Chapter are mostly concentrated on **researchers**³ (OECD, 2002: §301), as a proxy for scientists for two reasons. Firstly, there are good data on researchers obtained via national R&D surveys with common coverage and definitions and reported supra-nationally to Eurostat and to the OECD. Secondly, by identifying researchers, we are targeting the core of scientists⁴ who represent the innovation, technological and economic potential of European research.

There are around 214 000 people working as researchers in the Enwise countries, almost 81 000 of whom are women. In this Chapter, a closer look will be given to what dynamics lie behind the relatively elevated presence of women researchers in these countries and what it means both for women and for R&D.

1. A list of the Helsinki Group Statistical correspondents from the Enwise countries can be found in Annex 11 of this report.

2. And http://europa.eu.int/comm/research/science-society/women/wssi/index_en.html.

3. “Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned”.

4. Scientific practitioners, such as doctors or economists are also of interest, but it is not possible to capture them specifically through the available statistics.

Women as employees of the National Statistical Institutes of the Baltic countries

The National Statistical Institutes of the Baltic countries employ mainly women. For example, at the end of 2002 in Lithuania, 89% of the total employees were women (476 out of 533), in Latvia, 84% (496 out of 591) and in Estonia, 83% (361 out of 300). It should be mentioned that the president of the Central Statistical Bureau of Latvia is a woman (a normal phenomenon for Latvia, but still a rarity in the EU Member States). Why are statistics largely a feminine domain in the Baltic countries? Probably for two main reasons – salaries are comparably low and, during the soviet period, there was a gender bias in the image of

statistics in higher education. At this time it was possible to acquire the speciality of a statistician in the faculty of economics of the university, which was regarded as a *feminine* faculty. Now the situation in the field of education has changed somewhat – the speciality of a mathematician-statistician can be acquired at the faculty of mathematics where more young men are studying. But newly qualified specialists rarely start their careers in the statistical offices because salaries in the private firms are considerably higher.

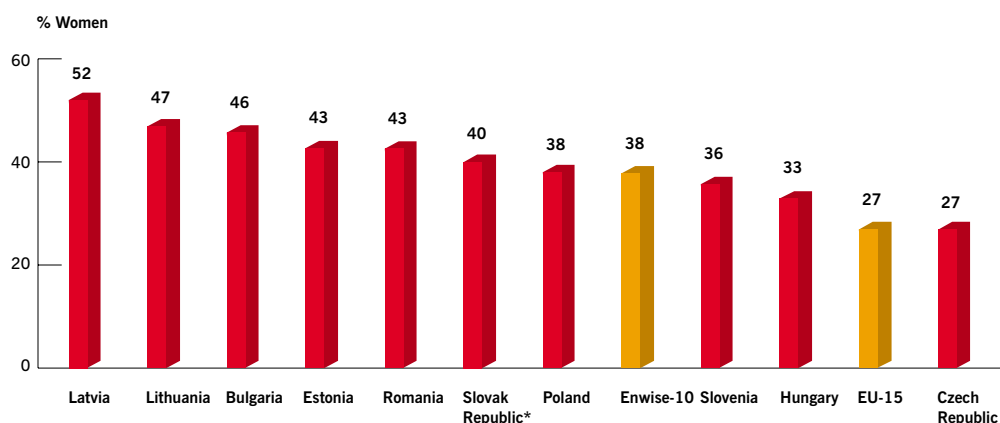
Source: Maranda Behmane, *Latvian Statistical Correspondent of the Helsinki Group on Women and Science*.

By building upon the existing knowledge that has been generated at EU level, this Chapter peels back the layers to examine whether these higher levels of participation are such good news for women scientists of the Enwise countries. It addresses their current situation and attempts to describe what the implications are for women from these countries and for R&D in the changing social, economic and political context as described in previous two Chapters. Drawing on the historical dimension presented there, the objective here is to describe the various ways, in which gender has an impact on the careers of women scientists and to identify the current influences and dynamics that need to be addressed in order to meet the European Research Area's objective to enhance the role and place of women in scientific research, which should apply to women from the Enwise countries too.

Optimistic statistics for women researchers?

Since 2002, starting with the Helsinki Group report mentioned above, a strong focus has been put on the high proportion of women researchers in the Enwise countries as compared to the EU Members States (EU-15). As shown in Figure 3.1 below, if one looks to the presence of women among researchers (expressed in percentages) in each of the Enwise countries, this representation gives the impression that all Enwise countries, except the Czech Republic, are performing better than the average EU-15 figure. On average women represent **38%** of the total researchers of the Enwise-10 compared to 27% for the EU-15, with a high 52% of women among the Latvian researchers down to 33% for Hungary and 27% for the Czech Republic.

Figure 3.1
Women among researchers in the Enwise countries in 2001 (in percentages)



Source: European Commission, 2003b.

Notes: Unit: head count, except for * where full-time equivalent

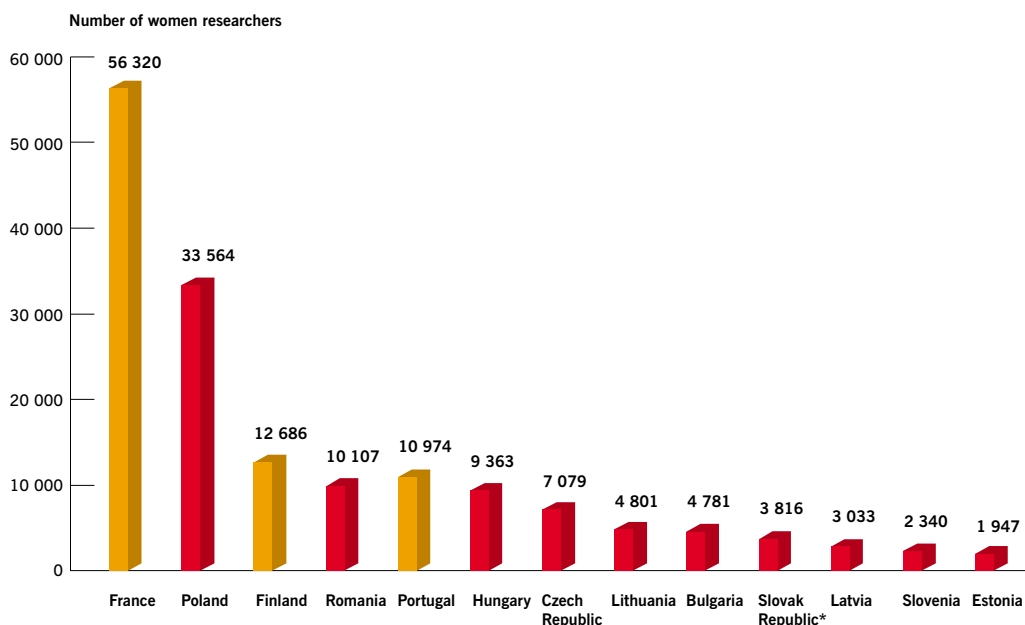
Exceptions to the reference year: BG, EE, LV (HES+GOV), PL, SI - 2000

PNP missing for HU, PL, RO + SK and for these countries in Enwise-10 average

However by only focusing on these percentages, one gives more prominence to the proportion of women among researchers in each country, but fails to put into context the size of the research communities in each country. It thus gives a **false impression** of the situation, which might consequently convey the **wrong message** that women scientists in the Enwise countries need no special support, since they are apparently performing on average better than their counterparts in the EU-15!

One way of eliciting the **right picture** is to look at the absolute numbers of researchers as presented in Figure 3.2 below.

Figure 3.2
Women researchers in the Enwise countries and in three Member States in 2001 (headcount)



Source: European Commission, 2003b.

Notes: Unit: head count, except for * where full-time equivalent
Exceptions to the reference year: BG, EE, LV (HES+GOV), PL and SI: 2000
PNP missing for HU, PL, RO + SK

Looking at this new picture, Poland and Romania are now at the top of the ranking, since they both have the largest female scientific communities. The four Enwise countries (Latvia, Lithuania, Bulgaria, Estonia), which stood out in Figure 3.1, are now among the six countries with the smallest⁵ female research populations. To complete this picture, and in order to avoid any distortion that would be created by inserting too many large numbers, the total numbers of women researchers of the Enwise-10 as well as of the EU-15 are not reported here, instead some EU Member States, such as France⁶, Finland and Portugal have been inserted in this graph, which enables one to locate and contextualise the various female scientific communities of the Enwise-10 among some of the EU-15. To close up the circle of comparisons, it has to be noted that the proportion of women among researchers for France, Finland and Portugal are respectively 27%, 28% and 44%.

5. A more complete appraisal of the situation could be given by comparing the numbers of researchers per 1000 population in each country.

6. This latter country with the largest number of women researchers among the EU-15 has been put into the picture as a parallel to Poland, which holds the same position among the Enwise-10.

With the enlargement in 2004, researchers from the eight concerned Enwise countries will bring an additional research population of around 180 000 individuals, of whom 66 000 will be women (representing around 37% of this total). Based on data from 2000, Bulgaria and Romania, which should join the EU in 2007, would bring slightly more than 34 000 individual researchers, of whom almost 15 000 women (representing here 44% of this total). These influxes will represent an increase of around 16% in the overall ranks of researchers in Member States from 1 May 2004 – and an increase of 22% among women researchers. Nevertheless, the impact of these 66 000 women researchers will have a limited impact on the average percentages of women among researchers for the (15+8) Member States. There will be a slightly higher increase in the Government (GOV) research institutions (OECD, 2002: §184)⁷, where around 33 000 individuals, of whom more than 13 000 are women, will raise the percentage of women among researchers in this sector from 31% to 33%. In the Higher Education (HES) sector (OECD, 2002: §206)⁸, this percentage will only increase from 33% to 34% and from 15% to slightly less than 16% in the Business Enterprise (BES) sector (OECD, 2002: §163)⁹. The distribution of women researchers from the Enwise countries inside each sector mentioned above - excluding a negligible Private Non-Profit sector (OECD, 2002: §194)¹⁰ - can be observed in Table 3.1 below.

Table 3.1
Distribution of women researchers from the Enwise countries within each R&D sector in 2001 (head count and percentages)

R&D Sector	Business Enterprise		Higher Education		Government		All Sectors ⁽¹⁾	
Country								
Bulgaria	605	4.5 %	875	1.8 %	3 301	17.1 %	4 781	5.9 %
Czech Republic	341	10.0 %	3 504	7.3 %	2 234	11.6 %	7 079	8.8 %
Estonia	164	1.2 %	1 434	3.0 %	349	1.8 %	1 947	2.4 %
Hungary	1 208	9.0 %	6 313	13.1 %	1 842	9.5 %	9 363	11.6 %
Latvia	518	3.9 %	2 059	4.3 %	419	2.2 %	2 996	3.7 %
Lithuania	248	1.9 %	3 439	7.1 %	1 114	5.8 %	4 801	5.9 %
Poland	3 332	4.9 %	24 925	51.8 %	5 307	27.5 %	33 564	41.5 %
Romania	4 835	6.2 %	2 470	5.1 %	2 802	4.5 %	10 107	12.5 %
Slovak Republic ⁽²⁾	644	4.8 %	2 089	4.3 %	1 083	5.6 %	3 816	4.7 %
Slovenia	471	3.5 %	1 007	2.1 %	862	4.5 %	2 340	2.9 %
Enwise-10	13 366	100 %	48 115	100 %	19 313	100 %	80 794	100 %

Source: European Commission, 2003b.

Notes: Unit: head count, except for (2) where full-time equivalent

Exceptions to the reference year: BG, EE, LV (HES+GOV), PL and SI: 2000
(1) PNP not included

42% of the 80 000-plus women researchers employed in these 3 sectors are to be found in Poland, while women from Hungary or Romania represent together another 25% of them (the remaining 33% are distributed throughout the other seven Enwise countries).

The distributions of researchers across the countries vary according to each sector. In the GOV sector, women researchers from five countries provide 81% of around 19 000 women researchers employed, which are Bulgaria (with 17% of them), the Czech Republic (12%), Hungary (10%), Poland (27%) and Romania (15%). Two countries alone, Poland (with 52%) and Hungary (13%), amount to 65% of around 48 000

7. The Government sector is composed of all departments, offices and other bodies which furnish but normally do not sell, to the community, those common services, other than higher education, which otherwise cannot be conveniently and economically provided, as well as those that administer the state and the economic and social policy of the community. It also includes non-profit institutions controlled and mainly financed by Government, but not administered by the Higher Education sector.

8. The Higher Education sector is composed of all Universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions.

9. The Business Enterprise sector includes all firms, organisations and institutions whose primary activity is the market production of goods or services (other than higher education) for sale to the general public at an economically significant price.

10. The Private Non-Profit sector includes non-market private non-profit institutions serving households (i.e. the general public) and private individuals or households.

women researchers employed in the HES. Finally, four countries can be highlighted for their participation in the pool of 13 366 women researchers employed in the BES, which are Romania (with 36%), Poland (with 25%) and to a lesser extent the Czech Republic (with 10%) and Hungary (with 9%).

However to get a full and more complete picture, one should also look¹¹ at the presence of men and women researchers of each Enwise country **across the sectors** and at that of men and women researchers of each Enwise country **inside each of the sectors**. While the proportion of women researchers in the PNP sector never exceeds 1% for any of the Enwise countries and thus can be seen as negligible, some additional remarks should be made for the three other sectors.

On average the 19 000-plus women researchers of the **Enwise-10** countries represent **24%** of the **GOV** sector (in the EU-15, the GOV accounts for an average of 15% of women researchers). The Bulgarian GOV sector represents 69% of all Bulgarian women researchers and in Slovenia 36% of women researchers are employed in this sector. **Just over 59%** of all women researchers in the **Enwise-10** countries are working in the HES (for the EU-15, this amounts to 68% of all women researchers). In the three Baltic countries the corresponding figures are even higher, 73% for Estonia, 72% for Lithuania and 69% for Latvia, as well as in Hungary with 67%. Finally, in the **BES** (which is discussed in more details at the end of this Chapter), the **Enwise-10** countries employ just over 13 000 women in this sector, which represents an average of **17%** of all the BES researchers. This is broadly comparable with the 15% of BES researchers who are women for ten¹² of the EU Member States. In the Czech Republic, Hungary, Poland and Romania, where 80% of the women researchers in the BES are working, only Romania (47%) has a significant share of its national women researchers employed here. In Hungary and Poland only 13% and 10% respectively of all women researchers can be found in the BES. This cannot be considered as good news for the employment of women researchers in the industrial sector, where there is a strong political drive to boost investment and employment by 2010 (see the 3% *Barcelona Objective* in the concluding remarks). The above-mentioned variation from the averages and between countries for the three main R&D sectors in the Enwise countries are probably caused by the various patterns inherited from the communist times and their specific transformations in the transitional period, as described in Chapter 2. Further studies are needed to enable sound and relevant explanations, within and between countries.

11. To this end, two extensive tables presenting the distribution of researchers (women and men), in head count numbers and percentages, for all the Enwise countries across R&D sectors and inside each R&D sector can be found respectively in Annexes 6 and 7 of this report.

12. BES data for the EU exclude Belgium, Luxembourg, The Netherlands, Sweden and the UK, for which no sex-disaggregated data are available.

Coming back to the gender distribution of researchers within each sector, and as shown previously in Figure 3.1, most Enwise countries have a higher than average proportion (38%) of women among all researchers. This average is brought down by the relative absence of women in three of the four countries with the largest female researcher populations, i.e. the Czech Republic (with 27%), Poland (with 33%) and Slovenia (with 36%). Looking at the average presence of women in each sector, women represent 43% of all GOV researchers, 39% of all HES researchers and 31% of all BES researchers for the Enwise-10. These averages hide some striking variation in the proportions of women employed in public sector research. In the GOV, as many as 52% of researchers are women in Estonia, whereas, in the Czech Republic, only 32% of such researchers are women. In the HES, 51% of GOV researchers are women in Latvia and 32% again in the Czech Republic.

Romania is a special case where the BES employs around half of all researchers (both women and men) and women are well “represented” (41%). Things do not look so promising for the Czech Republic, Hungary and Poland, where women employed in the BES represent 17%, 25% and 28% respectively of all researchers. Reasons for this variability again can be found in Chapter 2 and linked to the suggestion that, during the transitional period, significant numbers of men left R&D for more lucrative positions in business or in politics.

Women researchers in a wider employment perspective

In the Enwise countries, there are higher rates of female participation in the labour force than in the EU-15. This may also form part of the explanation for a higher presence of women as researchers in the Enwise countries, as seen in Table 3.2 below.

Table 3.2
Proportion of women from the Enwise countries
among Professionals, Employment and Researchers in 2002 (in percentages)

Women	Professionals	Employment	Researchers
Country			
Bulgaria	64.9 %	47.5 %	45.6 %
Czech Republic	52.7 %	43.7 %	26.8 %
Estonia	64.3 %	49.2 %	43.1 %
Hungary	57.9 %	45.0 %	33.0 %
Latvia	68.4 %	49.5 %	52.1 %
Lithuania	71.4 %	49.1 %	47.0 %
Poland	62.7 %	45.6 %	38.1 %
Romania	48.3 %	46.3 %	42.8 %
Slovak Republic	63.6 %	45.8 %	39.8 %
Slovenia	61.8 %	45.9 %	35.9 %
Enwise-10	59.2 %	45.9 %	37.8 %
EU-15	46.5 %	43.1 %	27.2 %

Sources: Professionals (ISCO-2) & Employment data: Eurostat - Community Labour Force Survey - RSEs data: European Commission, 2003b.
Notes: Professionals (ISCO-2) & Employment Enwise-10 averages: DG RTD estimate
RSEs: Reference year is 2001 except for BG, EE, LV (HES+GOV), PL, SI: 2000
Data are in head count, except for SK (full-time equivalent)
Enwise-10 average: DG RTD estimate
Private Non-Profit sector not included

45.9% of the 41 million people in total employment¹³ in the Enwise countries were women in 2002 (Franco & Blöndal, 2003), which makes the overall proportion of women researchers (37.8%) relatively low. Table 3.2 above shows that, in each Enwise country, about half of the people in the labour force are women.

Researchers are included in the major occupational group known as Professionals¹⁴, who are characterised by high educational attainment and professional experience. From Table 3.2, it is clear that the proportion of women among these Professionals is higher (59.2%) than for both the labour force (45.9%) and for researchers (37.8%). This is the case for each and every Enwise country, except in Latvia where women are slightly better represented as researchers (52.1%) than in the labour force (49.5%). Since researchers are part of the Professionals, these data indicate that highly qualified women in the Enwise countries are more likely to be concentrated in non-research occupations. One could assume, based on the high percentages of women among professionals, that women would form a larger share of the research population. Again further studies are necessary to obtain a better understanding of what this phenomenon means for each Enwise country.

Gender in learning and teaching

The level of qualification may also provide an explanation for these patterns. The published data (Dunne, 2003; European Commission, 2003b; Strack, 2004) on the flows of graduates and the national contributions (Enwise working documents, 2003) show that in most Enwise countries

13. Employed persons were those who during the reference week did any work for pay or profit for at least one hour, or were not working, but had jobs from which they were temporarily absent. Family workers are included.

14. Major group 2 of the International Standard Classification of Occupations (ISCO-88), also known as ISCO-2. "This major group includes occupations whose main tasks require a high level of professional knowledge and experience in the fields of physical and life sciences, or social sciences and humanities. The main tasks consist of increasing the existing stock of knowledge, applying scientific and artistic concepts and theories to the solution of problems, and teaching about the foregoing in a systematic manner".

Parental and paternity leave in Slovenia

Despite the possibility to share a larger part of parental leave, in the 1990s in Slovenia only 1% - 2% of fathers have shared this opportunity with their partner. The one-year paid parental leave was split into 105 days of maternity leave (to be taken exclusively by mother, starting 44 or 28 days before the delivery date) and the remaining parental leave (to be freely split between the parents - either sequentially or with both parents working part time). Starting with 2003, fathers in Slovenia became entitled to an additional 15 days paternity leave (to be used during the first 105 days of maternity leave) on the top of the already established one year parental leave. These 15 days are to be gradually extended in the forthcoming years to 90 days in total (with partial coverage of income).

Source: Mladenič, 2003.

Work-life double burden in Lithuania

In Lithuania, where the services of pre-school establishments are only available to 53.7% of children in the appropriate age-group, just 179 (1%) of all persons taking parental leave were men in 2002 (Data of the State Social Insurance Fund). This is due to stereotyped attitudes, whereby childcare is not regarded as a "masculine" job: according to a survey undertaken by Baltijos tyrimai, 57.2% of men think that it is their sole duty to earn money for the maintenance of the family. Equally, persons responsible for the care of pre-school children, elderly and disabled are able to work shorter hours according to the labour code, but no surveys are carried out to monitor the implementation of this legislation at micro-level. There are even provisions concerning the equal family duties of parents in the Constitution of the Republic of Lithuania, which state that the rights of spouses are equal, but the gendered roles persist nonetheless.

Source: from the Commission's working document "Single Programming Document for the EQUAL Community Initiative in Lithuania", 2003.

women are more likely than their male counterparts to remain in education after the age of 18, that they constitute the majority of HE graduates (Dunne, 2003) and that they generally enjoy higher growth rates than men for advanced level graduates.

Table 3.3
Higher Education and PhD graduates in the Enwise countries in 2001

Country	Total HE graduates	Of which Women HC	Of which Women in %	Total PhD graduates	Of which Women HC	of which Women in %
Bulgaria	47 500	29 700	62.5 %	376	158	42.0 %
Czech Republic	43 600	24 100	55.3 %	1 066	370	34.7 %
Estonia	7 600	5 000	65.8 %	149	77	51.7 %
Hungary	57 900	35 600	61.5 %	793	301	38.0 %
Latvia	20 300	11 300	55.7 %	37	18	48.6 %
Lithuania	27 500	17 500	63.6 %	261	137	52.5 %
Poland	431 100	284 100	65.9 %	4 400	1 832	41.6 %
Romania	76 200	41 800	54.9 %	:	:	:
Slovak Republic	26 300	14 200	54.0 %	532	212	39.8 %
Slovenia	12 000	7 100	59.2 %	298	146	49.0 %
Enwise-10	750 000	470 400	62.7 %	7 912	3 251	41.1 %

Source: Eurostat, Education statistics.

Notes: Unit: head count (HC) and " : " = not available

Romania not included in Enwise-10 estimate

Higher Education is equivalent to ISCED 5+6; PhD is equivalent to ISCED 6 (Unesco, 1997)

Poland, Estonia and Lithuania have the highest proportions of women graduates from HE programmes and Estonia and Lithuania also have the highest representation of women among PhD graduates. However, the proportion of women graduates declines between the first stage of HE and the doctoral level. This loss of women in the progression from under-

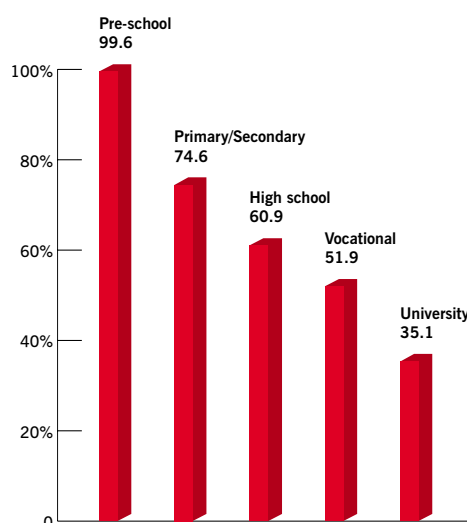
Gender perceptions on career opportunities in Hungary

The divergence between women and men in the perceptions of gender as a determining factor in career outcomes is neatly summed up in the results obtained from a survey undertaken in 2000 by the Hungarian Central Statistical Office. The figures in the table below represent the percentages of women and men who agreed with the sentence: "Being a man or a woman influences career opportunities strongly in Hungary" by educational level. Although both sexes are increasingly inclined to agree with this statement as the level of qualification becomes higher, the gender differences in perceptions also widen.

Educational level	Women	Men
Primary school	32 %	29 %
Skilled worker	37 %	30 %
Secondary school graduate	40 %	30 %
Higher education degree	50 %	22 %

Source: Hungarian Central Statistical Office, Budapest in Groó and Papp, 2003.

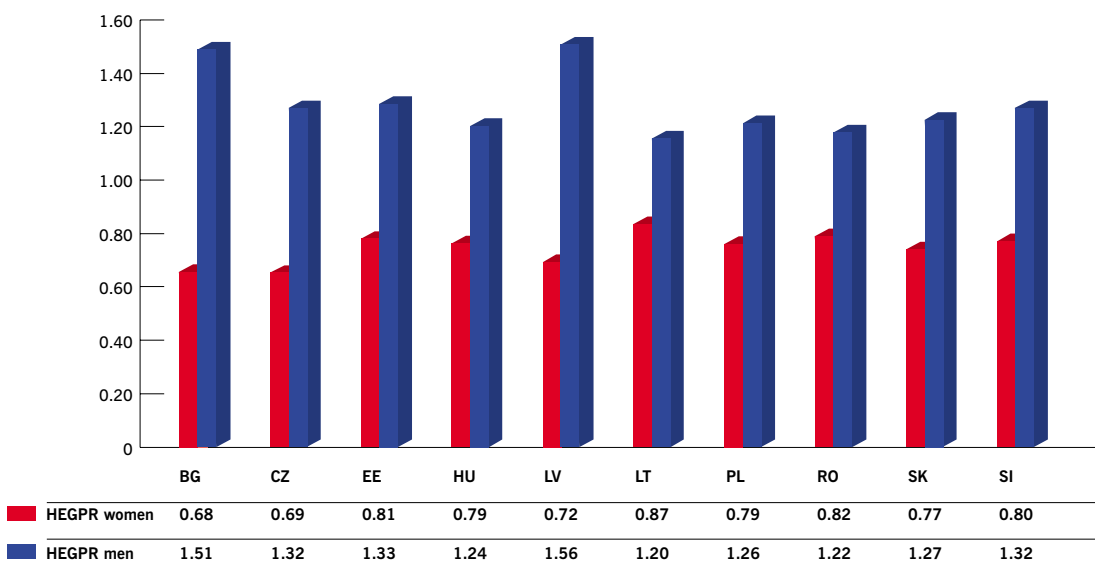
Share of female teaching staff by educational level in Romania (1997-1998)



Source: NCS, Education Statistic, Bucharest in Tripsa, 2003.

graduate to post-graduate achievement can be standardised and compared across countries with the *Higher Education Gender Progression Ratio* (HEGPR). This consists of expressing the percentage of women graduates at PhD level as a ratio of the percentage of women graduates at undergraduate level. In this way, it reveals something about the relationship between the proportions of women at each level and provides an indication of whether women are continuing to the next stage of their education in proportion to men. It is basically a measure of the short-fall of women pro rata from one stage to the next.

Figure 3.3
Higher Education Gender Progression Ratio for the Enwise countries in 2001



Source: UNECE gender statistics database at <http://www.unece.org/stats/gender/web/database.htm>

In addition to the HEGPR presented here, it is possible to standardise, between countries and over time, the success rates for female and male PhDs by looking at the *Odds Ratio* of the men's HEGPR/women's HEGPR. This indicates how much more likely men are than women to complete their PhDs.

Gender stereotyped illustrations of Slovak reading books for 1st class pupils



Source: Lýdia Virgovičová (1999) - Reading book for the 1st year pupils in primary schools - Media Trade - Slovak Pedagogical Publishing House, Bratislava, 9th edition, ISBN 80-08-03018-6, in Velichová, 2003.

Table 3.4
Higher Education Gender Odds Ratio in 2000 & 2001

Country	2000	2001
Bulgaria	2.48	2.22
Czech Republic	3.30	1.93
Estonia	1.26	1.65
Hungary	1.68	1.57
Latvia	2.04	2.16
Lithuania	1.58	1.38
Poland	1.74	1.59
Romania	1.81	1.48
Slovak Republic	1.76	1.65
Slovenia	2.38	1.65

Source: UNECE gender statistics database at <http://www.unece.org/stats/gender/web/database.htm>

For example, in Bulgaria in 2001, the HEGPR for men was 1.51% and for women 0.68%. The resulting *Odds Ratio* is 2.22, signifying that Bulgarian men HE graduates are 2.22 times more likely to successfully complete their PhD programme than Bulgarian women HE graduates. Looking at Table 3.4, one can see signs of a very slight improvement in favour of women's achievement since in all countries, except Estonia and Latvia, the values of this indicator decreased between 2000 and 2001.

These figures represent a serious loss of investment to countries if there are factors that are blocking educated women from reaching and completing the most advanced stages of education. Furthermore, one still does not know to what extent women and men capitalise upon their educational qualifications when competing for employment. In order to undertake a thorough analysis of equal opportunities experienced by colleagues in R&D and based upon educational attainment, it is necessary to obtain complete and harmonised data on R&D personnel by occupation and by level of qualification. Eurostat will start collecting data on researchers by qualification in the European R&D survey in 2004, which will allow for an improved monitoring of this situation.

Birds of a feather flock together

The different distributions of women and men across research sectors and fields of science¹⁵ are referred to in technical terms as *horizontal segregation*. To understand the participation of women in science in the Enwise countries, it is necessary to bear in mind that "science" and "research" encompass a broad range of activities, which are undertaken not only in the labour market context, but with important differences between sectors – as has already been seen – and between the fields of science. If only 20% of researchers are working in the BES in the Enwise countries, where 47% of R&D expenditure is performed, then it is likely to be a more attractive working environment than the HES, where 58% of all researchers account for just 23% of all R&D expenditure¹⁶. Of course the disciplinary profile of graduates has an impact on the availability of suitably qualified researchers. Women are less likely than men to graduate from engineering

15. The main fields of Science referred to in this Chapter are drawn from the Frascati Manual (OECD, 2002) and are: Natural Sciences (NS); Engineering and Technology (ET); Medical Sciences (MS); Agricultural Sciences (AS); Social Sciences (SS) and Humanities (H).

16. For more details, see Annex 6 of this report and Table 3.6 in the section "All that Glitters is not Gold" of this Chapter.

disciplines both at undergraduate and at post-graduate level (European Commission, 2003b; Strack, 2004). Apart from the difference for this field of science, one would not expect to find any other major gender differences in the presence of women as researchers.

Table 3.5
Numbers of researchers (and % of women among them)
by main field of science of HES + GOV in the Enwise countries in 2000

Field	Natural Sciences	Engineering & Technology	Medical Sciences	Agricultural Sciences	Social Sciences	Humanities
Country						
Bulgaria	2 720 (51 %)	2 122 (28 %)	1 063 (50 %)	965 (50 %)	504 (47 %)	934 (57 %)
Czech Republic	3 542 (31 %)	2 202 (22 %)	516 (42 %)	640 (45 %)	279 (40 %)	1 012 (42 %)
Estonia	848 (32 %)	429 (25 %)	213 (62 %)	193 (46 %)	334 (52 %)	348 (66 %)
Latvia	1 082 (47 %)	380 (38 %)	139 (71 %)	240 (57 %)	342 (37 %)	251 (78 %)
Lithuania	2 025 (40 %)	1 540 (26 %)	847 (55 %)	462 (45 %)	146 (58 %)	1 318 (65 %)
Poland ⁽¹⁾	10 282 (34 %)	10 726 (16 %)	7 801 (43 %)	2 523 (33 %)	898 (38 %)	8 677 (33 %)
Romania	2 687 (46 %)	2 667 (38 %)	583 (64 %)	211 (31 %)	101 (47 %)	623 (46 %)
Slovak Republic	2 348 (37 %)	1 883 (33 %)	1 040 (53 %)	249 (49 %)	154 (52 %)	474 (48 %)
Slovenia	719 (34 %)	671 (22 %)	302 (58 %)	252 (47 %)	727 (47 %)	164 (48 %)
Enwise-10	26 253 (38 %)	22 620 (23 %)	12 504 (47 %)	5 735 (41 %)	15 191 (43 %)	13 801 (41 %)

Source: European Commission, 2003b.

Notes: Unit: full-time equivalent

Exceptions to the reference year: LT, PL (HES): 2001; LV: 1999

(1) HES only. Field of science unknown for 793 women & 2 396 men

There are also connections between the *hard* (Engineering, Natural Sciences) and *soft* (Social Sciences & Humanities) fields of science and the sectors. For example, many *hard* scientists are recruited by the BES, because this is the sector where engineering and technological research are undertaken. On the other hand, social scientists are more likely to be found in the HES and GOV research institutions than in enterprise (Rüb-samen-Waigmann H. et al., 2003).

In the Enwise countries, 31% of the 43 565 researchers in the BES are women. This could be fleetingly interpreted as a sign that the Enwise countries are providing a better framework than the EU-15 for women researchers in business enterprises. However, the analysis in the earlier part of this Chapter served as a warning against hasty assumptions. As a matter of fact, the BES is still in its infancy in most Enwise countries, and there are other factors behind the increased presence of women. The principal reason is the small demographic size of this sector, which employs less than 14 000¹⁷ women across the Enwise-10 countries, more than half of whom are to be found in either Romania (4 835 women) and Poland (3 332 women) - less than in either France or Germany on their own. In view of the rapidly-evolving nature of research in these countries, of the market opportunities that enlargement will bring, and of the impact that commercialisation will have on science and innovation in the Enwise countries, it is necessary to undertake further analysis into the interface between women, research and enterprises in these countries.

It is also important to bear the differences between the various fields and sectors of science in mind, when planning for the future. At present, using the European data, it is not possible to identify detailed fields of science and examine whether sufficient numbers of people are being trained in core disciplines. This is because the Frascati classification of main fields of

17. See Annex 7 of this report.

science (OECD, 2002)¹⁸ fails to identify specifically the predominant domains in contemporary R&D or the domains where researchers are most likely to be concentrated: ICTs, biotechnology, nanotechnology, pharmaceuticals etc.

All that glitters is not gold

In the patriarchal value system, high R&D expenditure, often concentrated in the *hard* science domains, equates with high prestige and investment. There is therefore a triangular relationship between gold, glory and gender, in which high-expenditure areas dominate and social and low-cost sciences are under-valued. The gender bias in the *hard-soft* divide compounds the negative perceptions of the soft sciences and they risk as a consequence becoming further under-resourced. In terms of R&D investment, a total of 3.15 billion Euros – equivalent to 18% of the budget for the 6th Framework Programme – was concentrated in the BES in 2000 (see Table 3.6 below). 29% of total R&D expenditure is performed by GOV research institutions, even though they only employ 21% of researchers. Again, the contribution of the PNP is negligible compared to that of the other sectors.

18. Moreover, making the links between the Frascati classification and the international classifications of education (ISCED, see Unesco, 1997) and occupation (ISCO, see ILO, 1990) is subject to error because the fields are grouped differently.

“If I had my time again...”

I have been an excellent mathematician and I loved natural sciences. As a girl of 10-11 years old, I was buying a mathematical journal for young talents to solve the maths problems before going to sleep. I was preparing myself for mathematical competitions on my own, did not have any additional exercise organised by the school or my parents. I used to say that I love maths as much I love poetry. However, nobody in my surroundings paid any attention to my obvious talent. When I look back, I see that this was simply treated as unimportant, as some kind of an extra quality, not really needed. My parents were in literature and expected me to become a writer, or a university professor, but in Humanities, even ultimately philosophy. Teachers and professors did not take me seriously because I was a girl, and my maths skills were coming in a package among many other skills, considered as more *girlish*. In the secondary school, I also studied natural sciences and maths, but when it came to tertiary level I turned to social sciences. Among other things, I was very much aware that my country was in bad shape and that laboratories

for serious research were not available. We had a cousin, professor of physics, who had made some important discoveries in his field, and who simply could not provide experimental proof because his university lab was in terrible shape and lacking some important equipment. He then published a theoretical work in an international journal. Ultimately, Japanese scientists made an experiment based on his article and he was left out of what was supposed to be the discovery of his life. After this he fell into a serious depression. My reading of this episode was that in my country if one wants to be a scientist, it is much safer to stay in the field of social sciences where you can be more independent from material conditions. In fact, I was living in a social laboratory most of my life, with my country going through so many intense changes and I still do. Today, if I would make a choice, I would make it in favour of natural sciences and leave the country. I would never even consider the possibility of staying.

Biographical statement by Marina Blagojević, member of the Enwise Expert Group for the Balkan region.

Table 3.6
R&D expenditure by sector in thousands Euros
(and percentage distribution of R&D expenditure across sectors) in 2000

Sector	Business Enterprise	Higher Education	Government	Private Non-profit	Total
Country					
Bulgaria	15 276 (21 %)	7 043 (10 %)	49 060 (69 %)	116 (0 %)	71 494 (100 %)
Czech Republic	446 127 (60 %)	105 732 (14 %)	188 402 (25 %)	3 773 (1 %)	744 033 (100 %)
Estonia	8 334 (23 %)	19 410 (52 %)	8 564 (23 %)	722 (2 %)	37 030 (100 %)
Hungary (1)	179 596 (44 %)	97 331 (24 %)	105 728 (26 %)	:	405 267 (100 %)
Latvia	15 117 (40 %)	14 121 (38 %)	8 299 (22 %)	4 (0 %)	37 541 (100 %)
Lithuania	15 706 (22 %)	26 698 (37 %)	30 646 (42 %)	:	73 051 (100 %)
Poland	431 793 (36 %)	377 329 (32 %)	385 862 (32 %)	1 597 (0 %)	1 196 581 (100 %)
Romania	103 203 (69 %)	17 498 (12 %)	27 977 (19 %)	:	148 684 (100 %)
Slovak Republic ⁽¹⁾	94 010 (66 %)	13 591 (10 %)	35 257 (25 %)	:	142 858 (100 %)
Slovenia	167 458 (56 %)	49 387 (17 %)	77 023 (26 %)	3 480 (1 %)	297 348 (100 %)
Enwise-10⁽¹⁾	1 476 627 (47 %)	728 140 (23 %)	916 818 (29 %)	9 692 (0 %)	3 153 887 (100 %)

Source: Frank, 2003.

Note: (1) Total Gross Expenditure on R&D (GERD) does not correspond to the sum of R&D expenditure by sectors - : = not available

Under the communist regime, there was virtually no private sector research¹⁹. During the 1990s, the BES was an emerging sector in the Enwise countries, but today R&D expenditure is still small in absolute terms (European Commission, 2003a) and some decline in the numbers of researchers has been observed for Bulgaria, the Czech Republic, Estonia, Latvia, Romania, the Slovak Republic and Slovenia between 1998 and 2001 (European Commission, 2003b).

The variation in the availability of financial resources across sectors that is a recurrent theme in this Chapter also emerges here with regards to the *fields of science*. Table 3.7 below reveals how R&D expenditure per capita researcher is distributed across the main fields of science in public²⁰ research in nine of the ten Enwise countries²¹. The figures appear higher overall, because the data for researchers by fields of science are reported in full-time equivalent, and not in head count, as was the case for the sectors. This should not however be a distraction from the main observation, which is that research is attracting investment of less than 10 000 Euros *per capita* researcher per annum in five of the nine Enwise countries presented in Table 3.7 and that this also extends to Social Sciences and Humanities in Estonia and Poland. Taking the numbers of researchers into account, the gap in resource allocation between *hard* and *soft* sciences is widest in Poland and narrowest in Romania and Bulgaria.

19. In fact some industrial research was reported as performed in the BES during this period, but in the strict sense of the definition this was GOV or HES R&D performance (Paasi, 1998).

20. By public, reference is made here to the HES and GOV sectors. Data for Researchers are in full-time equivalent.

21. Hungarian data is missing.

Table 3.7

R&D expenditure, in Euros per annum, *per capita* researcher (women + men combined) and by fields of science in HES and GOV sectors in 2000

Field	Natural Sciences	Engineering & Technology	Medical Sciences	Agricultural Sciences	Social Sciences	Humanities	Total
Country							
Bulgaria	5 584	5 700	2 661	20 247	4 264	4 606	6 753
Czech Republic	35 333	43 057	42 079	35 052	26 781	22 287	35 909
Estonia	11 862	13 543	15 812	16 492	7 539	8 721	11 828
Latvia	11 126	7 947	8 388	11 938	6 132	4 916	9 211
Lithuania	8 838	9 455	6 569	12 974	4 201	5 441	7 488
Poland	21 671	20 788	18 367	37 231	5 246	3 810	15 578
Romania	3 975	6 857	7 892	10 194	7 662	3 173	5 841
Slovak Republic	8 527	6 258	3 995	24 582	4 112	2 823	6 483
Slovenia	55 192	51 191	34 791	40 528	37 142	28 390	44 589
Enwise-9	18 038	18 465	15 770	29 020	7 152	5 748	15 004

Source: Eurostat, S&T statistics.

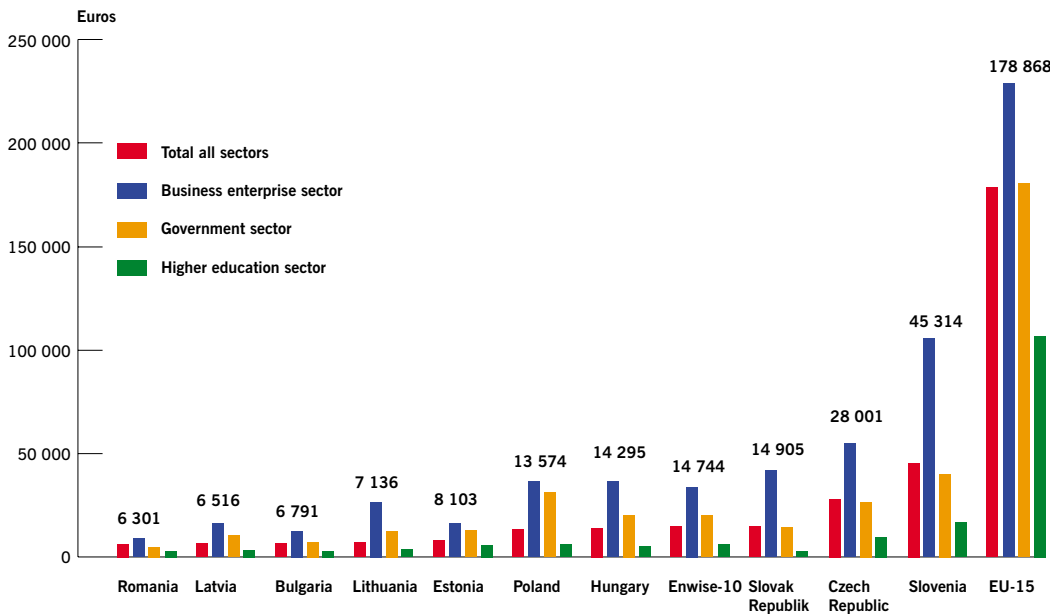
Notes: Unit: Data on researchers are in full-time equivalent. Exceptions to reference year: LT, PL (HES): 2001; LV: 1999

■ **What does this imply for women researchers in the Enwise countries?**

It has emerged earlier in this Chapter that the relatively higher percentages of women’s participation in research in the Enwise countries than in the EU-15, could be partly explained by higher female employment overall and in Professional occupations. Women are nonetheless under-represented in research in the Enwise countries. It remains hard to distinguish what this means in terms of working conditions for women because of the differences that exist between sectors and fields of science. By connecting data on researchers to data on R&D expenditure, one can see in Figure 3.4 below that the R&D expenditure per capita researcher varies across the Enwise countries according to sector as well as to country and field. There is high-er expenditure per capita researcher in the BES than in the other sectors.

Figure 3.4

R&D expenditure, in Euros per annum, *per capita* researcher and by R&D sector in 2001



Sources: Eurostat, S&T statistics, European Commission, 2003b.

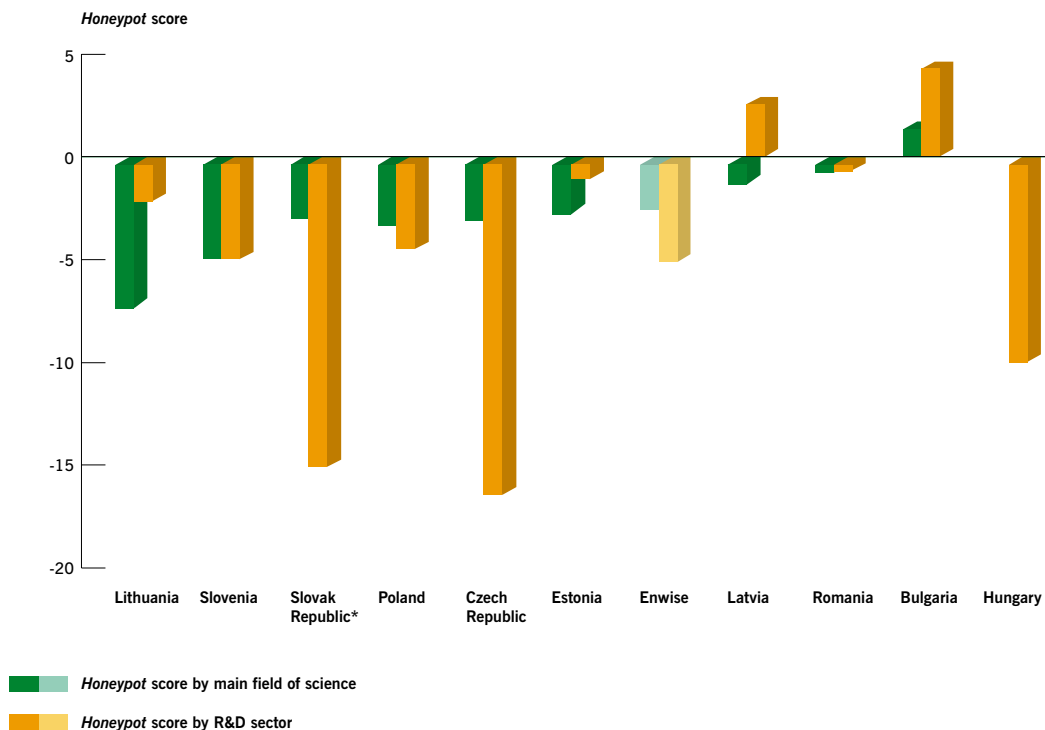
Notes: Unit: RSE data are in head count & refer to 2001 except for BG, EE, LV (HES+GOV), PL, SI: 2000 R&D expenditure data refer to 2000 - EU-15 average: DG RTD estimate based on 2001 data Data labels indicate average R&D expenditure per capita researcher across all sectors

Spending is less than 3 000 Euro for every researcher working in the HES in Bulgaria, Romania and in the Slovak Republic, whereas in Slovenia, it amounts to more than 105 000 Euro *per capita* researcher in the BES. For the EU-15 BES, the expenditure *per capita* researcher is highest in Sweden at 283 000 Euro (European Commission, 2003d)²² and lowest in Portugal with 121 000 Euro in 2001 (up from 93 000 Euro in 1999). In fact, a pattern emerges here where the highest proportions of women are to be found in the countries and sectors with the lowest R&D expenditure and the lowest proportions of women are in the sectors with the highest R&D expenditure. This fits with the suggestion that men are leaving these areas because they are no longer sufficiently attractive.

This pattern can be standardised so that the respective group behaviours of women and men *vis à vis* the fields of science²³ and the sectors²⁴ of R&D can subsequently be examined. A special tool has been developed for this purpose and is referred to as the *Honeypot* indicator²⁵. This name is intended to bring to mind the image of bees orbiting around a hive, since this indicator is a measure of the relationship between concentrations of women and men and R&D expenditure. It quantifies the loss of access to and/or control over R&D expenditure experienced by women researchers *en masse* because they are more likely to be concentrated in the low expenditure R&D sectors or fields of science.

22. Data for 1999 in current Euro.
23. The Frascati Manual (OECD, 2002) provides definitions for the six main fields of science: Natural Sciences, Engineering and Technology, Medical Sciences, Agricultural Sciences, Social Sciences & Humanities.
24. HES, GOV and BES in this case.
25. It can be calculated from available and official R&D statistics and is comparable between countries and over time. The score itself is the difference between the expected R&D expenditure per capita pro rata for women and the observed R&D expenditure per capita pro rata for women expressed as a percentage of the expected R&D expenditure per capita pro rata for women.

Figure 3.5
Honeypot scores by main field of science and by R&D sector in 2001



Source: Eurostat, S&T statistics; DG Research, WiS database.
Notes: Unit: head count except for * where full-time equivalent
Exceptions to reference year: RSEs: BG, EE, LV (HES and GOV only), PL, SI: 2000
R&D expenditure: HU (GOV & HES): 1999
Honeypot scores by field are for HES and GOV sectors only
Data for researchers by field and sex are not available for HU
* HES expenditure data missing

By comparing the *Honeypot* scores for the *fields of science* with those for the distribution by *sector*, it appears that the distribution of women and men researchers across the *sectors* seems to be a stronger determinant of inequality in most countries. When interpreting the results from Figure 3.5, it is important to note that the negative *Honeypot* scores indicate that women are losing out on their expected share of access to/control over R&D expenditure. Scores around 0 indicate no differences between the sexes. Because the calculation ignores any effect from hierarchical distributions within the category of researchers, it is highly likely that these results in fact represent the *best possible* scenario for women.

In the Enwise countries where the overall percentages of women are low (for example, the Czech Republic and Hungary), women's *Honeypot* scores are negative, signalling that in these countries, women researchers are far more likely than their male counterparts to be distributed in low-expenditure sectors. The most negative scores, yielded in the Czech Republic, the Slovak Republic and Hungary, indicate that women are missing out on 16.47%, 15.05% and 9.96% respectively of their expected share of R&D expenditure.

Conversely, in the Enwise countries, where the results from the *Honeypot* indicator are positive (Latvia and Bulgaria), there are higher proportions of women researchers (see Table 3.2). Slovenia is the outlier, as shown in Figure 3.6, since it has much higher R&D expenditure per capita researcher than the other Enwise countries. Slovenia could therefore be regarded as the Enwise country with the optimal gender-investment scenario.

Women appear to have more equal access to R&D expenditure where the overall proportions of women and men in research are more balanced (i.e. Romania). In the first instance, it could therefore be hastily assumed that a critical mass of women in the research ranks (as is the case in Bulgaria, Latvia and Romania) is sufficient for ensuring equitable access to R&D expenditure between the sexes. However, Figure 3.6 shows how the *Honey-*

“Between a rock and a hard place...”

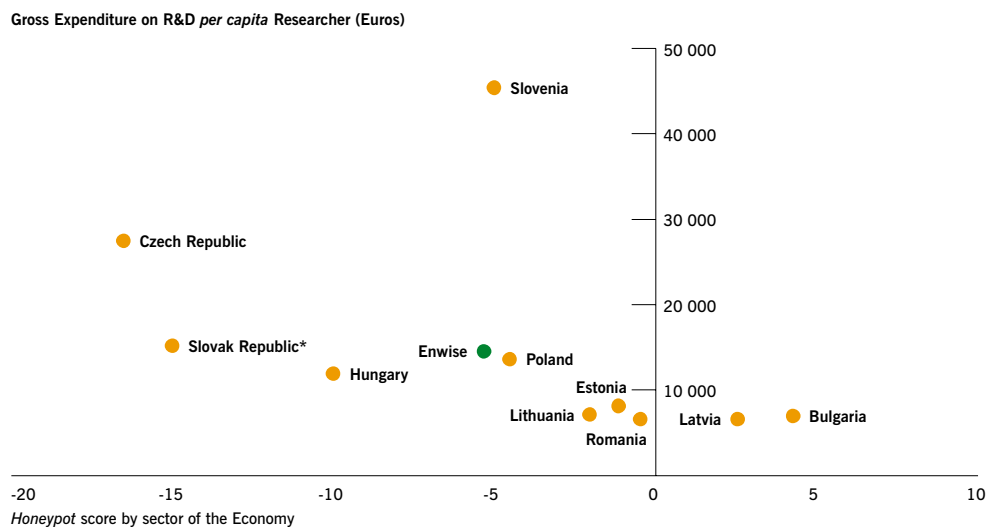
As a last year student of the Latvian State University I had the opportunity to finish my graduation work in the Moscow region in a high-level biological research centre. After university I continued my post-graduate studies in this research centre. Together with my husband, we defended, exactly the same day, our thesis for the degree of Candidate of Sciences. I remember that somebody mentioned (but only to me) that this was a very rare situation for a wife and a husband to start their career at the same time. After returning back to Latvia I started to work in one of the leading research institutes of Latvia. I had the opportunity to start new research and my research initiatives were supported by the

director of our institute. I made a radical change in my career 7 years ago. I turned to administrative work and started to work in the Ministry of Education and Science. It was a hard decision for me...The research I performed was very expensive and therefore I had to think how to proceed with my research works. Actually I had two possibilities: to leave my country and go abroad to continue my research (such an opportunity was offered to me) or to change my way of life. Because of my family and children, I chose the latter.

Biographical statement by Maija Bundule, Latvian member of the Enwise Expert Group.

pot score for the R&D sectors and the R&D expenditure per capita researcher are strongly and negatively correlated. The apparently positive *Honeypot* scores therefore need to be considered with regards to the volume of R&D investment. Indeed, Bulgaria, Latvia and Romania also have the lowest R&D expenditure per capita among the Enwise countries (see Table 3.7 and Figure 3.4).

Figure 3.6
Correlation between *Honeypot* scores by R&D sector and Gross Expenditure on R&D (GERD) per capita Researcher in 2001



Source: Eurostat, S&T statistics; DG Research, WIS database.
Notes: Unit: head count except for * where full-time equivalent
Exceptions to reference year: RSEs: BG, EE, LV (HES and GOV only), PL, SI: 2000
R&D expenditure: HU (GOV & HES): 1999

The picture shown in Figure 3.6 above has serious implications for women in the Enwise countries. The relationship between gender and available financial resources – and hence the potential rewards – signal that opportunities for women researchers are only really comparable with those of men in the Enwise countries where there are least resources for R&D.

This all points to a scenario where women are being used as a kind of secondary human resource to prop up the R&D domains that are of little interest to men, because the reward system is no longer sufficiently attractive. At the other end of the scale, women appear to be squeezed out of R&D where the reward systems are more promising and the stakes are higher, as in the Czech Republic for example. The high proportions of women in R&D in the Enwise countries therefore signal better news for R&D than they do for women, since women are prepared to perform the same work for less money and under less favourable conditions. The HES and GOV are traditionally regarded as providing safer and more stable occupations, even though the pay is lower. The national contributions (Enwise working documents, 2003) support the emerging picture of women tending to choose to work and remain here in order to manage supporting their families with at least one stable income in the new competitive workplace.

The value of the *Honey-pot* indicator is that it gives a supra-level vision of what the overall patterns are for the distributions of monetary control between the sexes by combining elements of the R&D context and gender. But three other important reward systems should also be considered which are salaries, the attribution of research funding and the quality of working tools and equipment. The scenarios presented hereafter are fragmented examples of what is happening on the ground. There is not yet²⁶ a harmonised way of examining pay for scientists or researchers in the Enwise countries or for comparing scientific salaries to those of other highly-qualified professionals.

■ Low pay: Case studies in Lithuania and in the Czech Republic

Table 3.8
Lithuanian Monthly Gross Earnings in Science in 2001

Position	Scientific qualification	Monthly earning in Litas (and €)
Professor Principal researcher	Scientific degree	1 732-2 310 (502-670)
Docent (Associate professor) Senior researcher	Scientific degree or corresponding (for docent) MA degree or higher education	1 155-1 848 (335-536)
Lecturer (reader) Researcher	Scientific degree or corresponding (for lecturer) MA degree or higher education	866-1 270 (251-368)
Assistant Junior researcher	MA degree or corresponding higher education	866 (251)

Source: Lithuanian Government (March 21, 2001. Nr.319) in Zvinkliene, 2003.
Note: 1 € = 3.45 Litas

Table 3.8 above itemises the pay regimes for academic staff in Lithuania. The figures refer to the top and bottom pay scales for each position in Higher Education and Government research institutions. The actual earnings of scientists depend on the internal structure and budget of each institution within the framework of a legal scale system. The national unadjusted pay gap was 16% in 2001 (this is the difference in men's and women's gross hourly earnings as a percentage of men's gross hourly earnings). In real terms this represented the difference between 7.06 Litas (2.05 Euros) per hour for men and 5.92 Litas (1.72 Euros) per hour for women. In Lithuania in the same year, the average monthly gross earnings for men were

26. All Enwise countries are expected to respond to the European Structure of Earnings Surveys (SES) by June 2004 and the results will be published by early 2005. It is hoped that these data - and the data emanating from the SES for 2006, which will be published in 2008 - will provide a better picture of the progress towards equal pay for women and men scientists. This information will also enable a comparison with other knowledge-intensive fields, so that the attractiveness of scientific careers in Enwise countries and beyond can be monitored.

Opening doors in Poland?

A Polish survey on Internal Brain Drain stated that an educated Polish person speaking several languages could earn more as a door-keeper of the Grand Hotel than as a researcher in the field of philosophy. Due to this budget constraint, scholars and researchers are inclined to undertake double or even triple employment.

Source: Oleksy, 2003.

Gender pay gap in the new German Eastern Länder

In the new *Länder*, employees with Higher Education qualifications, 37% of men (compared to 70% in the old *Länder*) but only 18% of women (compared to 29% in the old *Länder*) had a monthly income of over 2 045 euros, in April 2001. Thus, twice as many men as women were in the higher income group. In the old *Länder*, the pay gap was even greater, with two and a half times as many men as women in this group. For female and male employees as a whole, having a Higher Education qualification paid off financially.

Source: Statistisches Bundesamt (2002): *Bevölkerung und Erwerbstätigkeit. Stand und Entwicklung der Erwerbstätigkeit.* Stuttgart: Metzler Poeschel in Burkhardt, 2003.

1 181 Litas (342.32 Euros) and 961.8 Litas (278.78 Euros) for women, showing a slightly wider gender pay gap of 19% because of gender differences in patterns of full-time and part-time work. This means that an experienced lecturer, or even a newly appointed senior researcher, is earning something in the region of the average monthly wage for all occupations: hardly a strong incentive for the highly qualified women and men in Lithuania to pursue an academic career.

Czech data from 1999 show that, among employees with basic educational attainment, women's salaries were 74.7% of men's salaries (representing a gender pay gap of 25.3%). In 2001, the average gross monthly earnings for full-time employees in enterprises²⁷ were 18 481 CzK²⁸ (572 Euros) for men and 13 755 CzK (426 Euros) for women - a similar gender pay gap of 26%. Among employees with a university education, the salaries are higher but the gender pay gap is even wider: these women only earn 62.5% of men's salaries - a pay gap of 37.5%. In 1999 the average salary for male graduates was 27 814 CzK (less than 1 000 Euros) and 17 395 CzK (600 Euros) for women. This indicates that, whereas female graduates earn more than female non-graduates, the qualification only boosts their earnings by about a quarter of the average salary. However, men, if they are graduates, will earn one and a half times more than the average.

27. NACE categories A - O with more than 9 employees.

28. Česká Koruna (Czech Crowns) - 1 Euro = 32.3 CzK.

Factors that widen the gender pay gap in Poland

In Poland, different mandatory retirement ages exist for men (65) and women (60). This widens the pay gap between men and women. The pension of a woman who retires 5 year earlier than a man and whose wages were the same, will be up to 40% smaller. Polish women, most of whom always used to work full time in demanding jobs, traditionally preferred an earlier retirement age, which they saw,

not without reason, as a compensation for a life time of working two jobs – in the home and in the workplace. Today, they are in the process of realising that the *privileges* they enjoyed under the old system represent added costs to the state in a market economy and may now work to their disadvantage.

Source: Oleksy, 2003.

Gender pay gap in the Slovak Republic

The table below shows women's salaries as a percentage of men's salaries according to level of education. Worryingly, the gender pay gap in the

Slovak Republic is much wider in the most educated group, which includes Slovak women scientists and researchers.

Level of education	1996	1997	1998	1999	2000
Basic	75.7 %	73.9 %	72.4 %	74.1 %	72.6 %
Lower Secondary	69.5 %	67.5 %	69.5 %	71.5 %	70.7 %
General Secondary	80.3 %	68.1 %	76.7 %	77.3 %	77.9 %
University	74.7 %	84.2 %	72.2 %	66.8 %	65.4 %
Total	74.5 %	78.5 %	77.0 %	75.0 %	75.0 %

Source: G. Mesežnikov (ed), Slovakia 2002 - A Global Report on the State of Society, Bratislava: SME in Velichová, 2003.

■ Research funding

The data on the success rates of research funding applications are not comparable between countries, but are comparable between the sexes. The published statistics (European Commission, 2003b) are based upon numbers of applications, ignoring both the amounts of funding applied for and the amounts received. Women from the Enwise countries generally submit fewer applications than men. Applications submitted by men appear to be consistently more likely to be successful than those from women. The gap between the success rates for women and men is widest in Hungary and Poland.

A connection can also be found between research funding success and 'take-home' pay. Net earnings in senior positions may also depend on bonuses linked to, for example, the number of projects at stake, the total amount granted for the implementation of each programme and the tasks to be fulfilled in each project. In Latvia, two thirds of grant holders are men. Male scientists do not leave science if they have the opportunity to make extra money by carrying out parallel activities in business or in other universities.

■ The state of the art – Can the Enwise countries compete with their IT facilities?

According to some members of the Enwise Expert Group (Hungary, Latvia, Romania and the Slovak Republic) there are no reports of gender discrimination regarding the access to the Internet or the availability of personal computers. However, even though the situation is improving (see Table 3.9), there is still a lack of available IT equipment in state research institutes and universities. The main problem seems to be a lack of modern and high quality computers and access to the Internet. This has an impact on the efficiency of research and communication, with a knock-on effect for the ability of women and men researchers in the Enwise countries to compete in terms of exploiting their innovations.

Should women have to fight for funding... against other women?

The most exciting argument I received came from the Sandra Harding text: "there is a great value from the different cognitive pattern of women in scientific research and science can only benefit from this". In this perspective, one of the main arguments from the workshop receives even more *weight*: it must be ensured that research projects written by women have more possibilities to compete for funding. The problem is that even the involvement of more

women in a decisive body will not help the situation, because most of those women well established in science already accepted men's rules of the *game*. Therefore, my only hope is that more widely discussed and elaborated ideas will change at least the situation for the new generation.

Lithuanian young female scientist (age: 35, sociologist) at the Enwise workshop on Young scientists, Prague April 2003.

Table 3.9
Availability of computers for students and staff
in Higher Education establishments in Latvia (2000-2003)

Academic Year	Number of computers	Inter alia			Number of students	Number of students per computer
		Studies	Administration	Research		
2000/2001	5 959	4 645	:	:	101 270	17.0
2001/2002	8 057	5 198	:	:	110 500	13.7
2002/2003	8 720	5 540	2 430	750	118 845	13.6

Source: Central Statistical Bureau of Latvia in Bundule, 2003.
 Note: : = missing data

In the concerned national contributions (Enwise working documents, 2003), it is reported that about every second scientist has a computer. Practically every scientist has her/his own e-mail address. Access to Internet is provided for researchers in all state research institutes and higher education establishments, but is sometimes limited to strict hours or days of the week. The Ministry for Education and Science in Latvia partly covers the costs for the use of Internet in state research institutes and universities. Table 3.10 below itemises the numbers of computers with access to the Internet in Higher Education establishments in Latvia and the percentage of these computers with Internet access. In the course of preparing the Enwise report, it was discovered that, in some cases, simple Word files needed to be converted to RTF in Brussels so that they could be read in Prague...

Table 3.10
Access to Internet in Higher Education establishments in Latvia (2000-2003)

Academic Year	Total number of computers with access to Internet	Inter alia: for research	Percentage of HEE computers with Internet access
2000/2001	4 746	3 801	79.6 %
2001/2002	6 726	4 182	83.5 %
2002/2003	7 649	4 907	87.7 %

Source: Central Statistical Bureau of Latvia in Bundule, 2003.

Girls on Top?

The distributions of male and female scientists throughout the scientific hierarchy constitute a major explanatory factor for the pay gap, but they also underlie the entire reward system, including prestige, academic and intellectual recognition and decision-making power (Osborn et al., 2000). For example, scientific productivity often appears to be higher for men than for women, because the energies of many collaborators are accredited to just one person (usually the male boss). The measurement of the different distributions of women and men in hierarchical systems is commonly referred to as *vertical segregation*²⁹.

29. See Blackburn et al. 2002 for a more technical discussion on the orthogonal relationship between vertical and horizontal segregation and the measurement of vertical segregation.

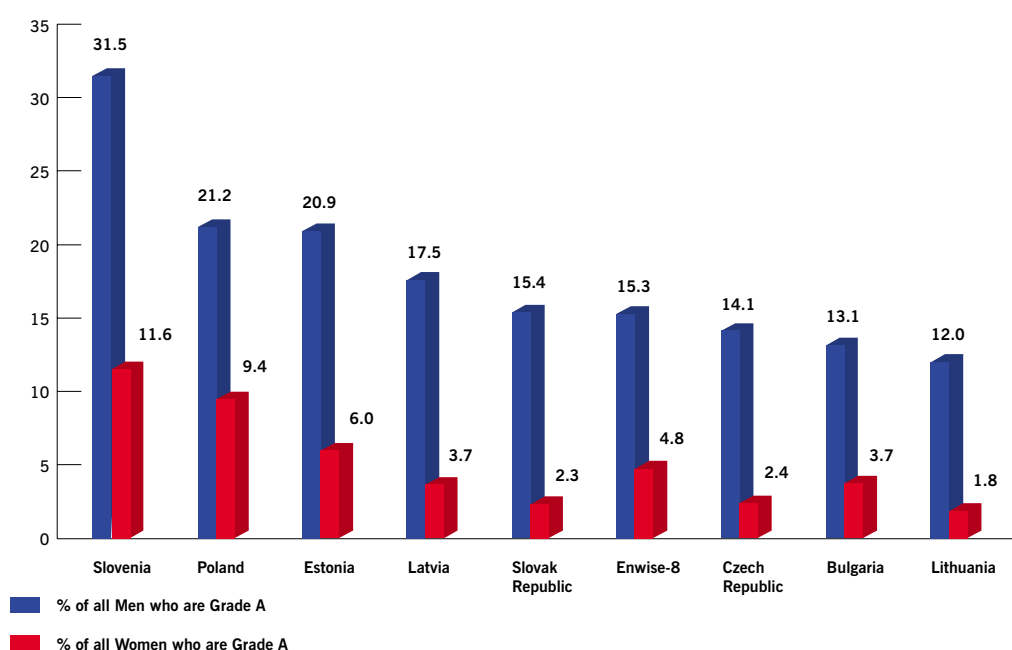
■ University staff

In the “*She Figures 2003*” (European Commission, 2003b), the data³⁰ reported to the Commission by the Statistical Correspondents of the Helsinki Group reveal sharp differences in the participation of women among all academic staff and the participation of women in senior grades. Levels of women’s participation among university staff are similar to their presence as researchers. But this declines sharply in the senior grades³¹ (full professorships), so that men are more than three times more likely to reach these positions than women.

30. The best data available on vertical segregation that are broadly comparable and are focussed on teaching and research staff are drawn from surveys of Higher Education institutions that are conducted in most countries. There is no formal collection at international level of many of the variables in these surveys. Many of the definitions are common, but the coverage varies from country to country.

31. For details of the corresponding grades, see Annex 8 of this report.

Figure 3.7
Women and men academic staff in Grade A positions in 2000 (percentages)



Source: DG Research, WiS database.

Unit: head count

Data missing: Hungary and Romania

Enwise-8 totals exclude Hungary and Romania

Data are not yet fully comparable between countries due to differences in coverage & definitions

A true Slovak story on equal opportunities at the university

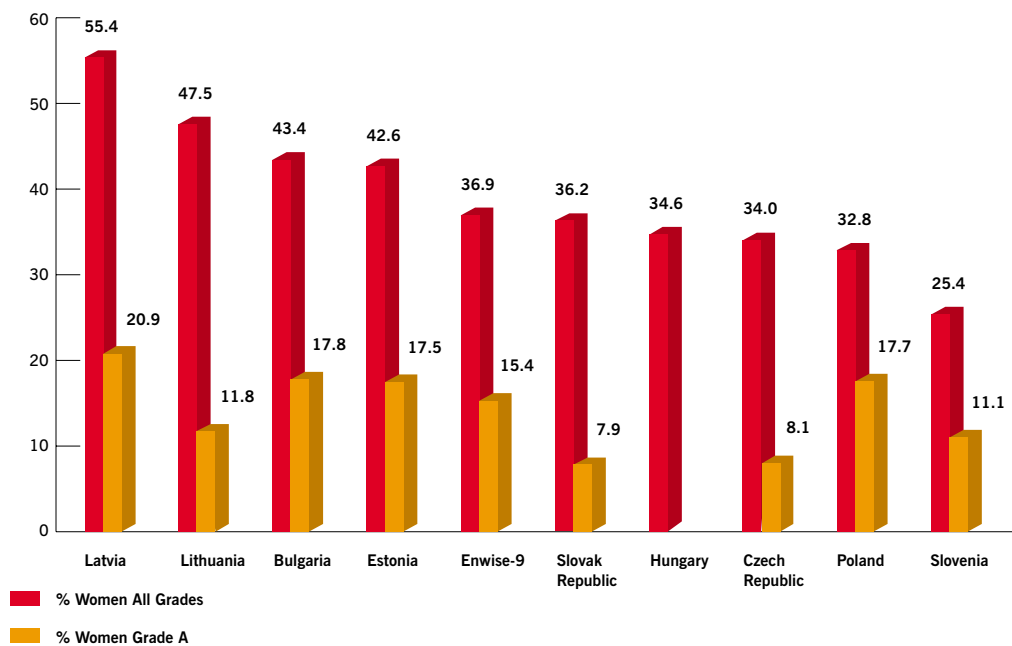
I have worked at the Slovak University of Technology in Bratislava for more than 20 years and have been Deputy Head of the Department of Mathematics for 7 years. Every three years, it is possible to apply for leading academic positions. This year, I decided to apply for the position of Head of Department. My professional profile was at least as good as that of two other male candidates, if not better. The results of my psychological tests showed that I was the most suitable candidate for the position. However, I was not accepted for the position. What were the reasons for this? Incompetence could not be the case, neither could

lack of experience or insufficient professional qualification... In general, authorities do not acknowledge preference for men or reluctance to promote women in technical sciences and engineering. But it is clear that women will never reach the leading positions in the university, unless there are mechanisms in place to support equal opportunities... The mainstreaming of gender equality procedures is urgently needed at all levels of policy-making and administration procedures.

Biographical statement by Daniela Velichová,
Slovak member of the Enwise Expert Group.

As can be seen from Figure 3.7, the worst situation for women is to be found in Lithuania and in the Slovak Republic, where men are nearly seven times more likely than women to reach the most senior grades and six times more likely in the Czech Republic. Men are still more than twice as likely as women to reach these top positions in Poland and Slovenia, but these are the Enwise countries with the lowest sex discrimination in academic careers, as can be seen from Figure 3.8 below.

Figure 3.8
Women among academic staff and among grade A staff in 2000 (percentages)



Source: DG Research, WIS database.

Notes: Unit: head count

Data missing: Hungary (% Woman Grade A) and Romania

Enwise-9 totals excludes Hungary (% Woman Grade A only) and Romania

Data are not yet comparable between countries due to differences in coverage & definitions

The example of **Polish universities**, where women constitute a third of all academic staff, is typically illustrative of vertical segregation in the Enwise countries, even though the statistics show that women have the best chance of promotion in Poland of all the Enwise countries. Polish women constitute approximately 33% of academic staff and tend to be concentrated in the lower academic positions. In Poland, only 16% of full professors and 22% of associate professors are women; however, 31% of the academic staff with a *Habilitation*³² and 39% with a PhD are women (both full-time and part-time positions are included).

Decision-making power is crucial, not as an end in itself, but because it is only through equal and representative participation at the highest levels that women can actively shape the scientific questions and answers of the time. The Women and Science Unit has recognised this need to promote the individual and collective voices of women scientists by launching a **European Platform for Women Scientists**³³, which will act as a forum for policy-shaping and for promoting a more ethical gender dialogue. This plat-

32. This is the professional assessment that has to be successfully completed in order to obtain the title of Professor in Poland.

33. http://europa.eu.int/comm/research/science-society/women-science/network_en.html

form will also develop synergies between existing stakeholders and support gender equality at institutional level.

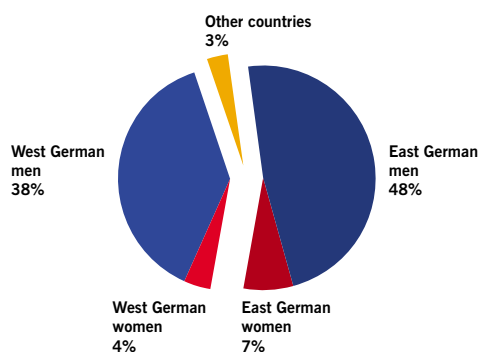
Women's ability to influence decision-making in Slovenia appears to have improved gradually over the last decade: in 1993 there were only 4% women among the fellows of the Council for Science and Technology, while in 2001 they were 17.1%. In the Slovenian National Scientific Research Council, the presence of women has also risen from 5.9% in 1993 to 30% in 2001. Equally, this segregation is reflected in the composition of senior figures in the Academies of Sciences³⁴ of all the Enwise countries where only 9% of scientists at the highest level (the Board of Directors) are women.

34. Annex 9 of this report presents the female representation in the National Academies of Sciences in the Enwise countries.

Academic (dis)appointments in the new German Eastern Länder

After reunification and for a very short period, the new appointments to all professorships were one of the main features of the personnel renewal of East German Higher Education institutions. This process included the historically unique opportunity to make a huge step towards gender equality, because there were a lot of highly qualified female scientists interested in scientific work. But the reality was quite different. The decision-makers were male and they preferred men. Statistical surveys and case studies confirm that - in relation to the number of applicants - the largest group considered to be worthy of being short listed and appointed were men from the old Länder with women lagging behind.

A survey conducted by the Projektgruppe Hochschulforschung Berlin-Karlshorst showed an appointment rate of 75% in 1995 and disclosed the following appointment figures (n=about 5 000 persons):



The renewal of the East German Higher Education system appears to have done little to alter the traditional male dominance in this field, but has brought some fresh advantages and opportunities to West German men. East German scientists had good chances in medicine, engineering, natural science and mathematics - that means in subjects which were during the communist period were not so close to the political system. All these subjects were male dominated. Consequently, former gender segregation supported men to start a new scientific career under new political conditions.

East German women had first of all chances in the new sector of *Fachhochschule* (universities of applied sciences) characterised by higher volumes of teaching, smaller research budgets, lower salaries and often located in little towns. The enormous gender differences in appointments according to the type of institutions, the level of salary and the field of science/research prove the discriminatory tendencies and the perpetuation of hierarchical structures. Several structural effects of marginalisation compounded the problem: the combination of *university* (especially in a renowned place and high level of scientific reputation), *C4-professorship* (highest position) and *traditional male subject* led to a nearly total exclusion of women from positions.

Source: Burkhardt, 2003.

Being young, female and an EU project leader in Slovenia

It is hard to say how many of the difficulties encountered in the local environment were due to gender issues and how many due to my young age. It is clear that being a young woman scientist is not trivial and a lot of energy is to be used for setting good working conditions. For instance, the idea of getting a project and taking care of the work, but letting the others decide on the usage of the associated funding may have been common

practice under the communist regime, but nowadays it is not acceptable. The good part is that not only young researchers of both sex but also some senior researchers recognise that and are prepared to fight. Having clear recommendations and support from EU can be very helpful in such situations.

Source: Mladenič, 2003.

■ Research & Development occupations

In R&D, there is also marked gender dissimilarity across the three occupations: researchers, technicians and support staff. This is best described using the *Index of Dissimilarity*. This indicator quantifies the percentage of all R&D personnel who would have to change occupation in order to achieve a balanced gender distribution in each occupation. The higher the proportion of R&D personnel who would have to change occupations, the greater the differences in the distribution of occupations between the sexes. This is another way of getting behind the summary indicators to find out whether things are really as equal as they might seem between the sexes.

It is important to interpret the results of the *Index of Dissimilarity* alongside the proportion of women within each occupation³⁵. In the Czech Republic and in Hungary, around a quarter of all R&D personnel would need to change occupations in order to achieve the same proportions of women and men within each occupation overall. In Bulgaria, the Czech Republic, Estonia, Hungary and the Slovak Republic the highest levels of occupational dissimilarity in R&D are to be found in the sectors where women are most likely to be concentrated as researchers³⁶. In Slovenia, there are also high levels of dissimilarity in the HES where more than a third of women researchers are working. Latvia is the only Enwise country where there is little occupational dissimilarity in the R&D sector where the majority of women researchers are employed.

35. See Annex 7 of this report.
36. See also Annex 6 of this report.

Table 3.11
Index of Dissimilarity of R&D personnel across the occupations in 2000⁽¹⁾
by R&D sector (percentages)

Index of Dissimilarity in R&D sectors	Higher education	Government	Business enterprise
Country			
Bulgaria	5.9 %	20.3 %	10.0 %
Czech Republic	23.5 %	28.5 %	21.5 %
Estonia	17.5 %	26.1 %	23.0 %
Latvia	4.7 %	14.1 %	10.9 %
Lithuania	17.8 %	18.5 %	16.6 %
Hungary	27.7 %	23.1 %	28.5 %
Poland	15.3 %	18.2 %	14.4 %
Romania	14.1 %	8.8 %	12.6 %
Slovak Republic ⁽²⁾	12.1 %	24.7 %	18.0 %
Slovenia	20.9 %	9.1 %	8.0 %

Source: Eurostat, S&T statistics.

Notes: Unit: head count except for (2) full-time equivalent

(1) Exceptions to the reference year: LV (BES), LT, 2001

More women from the Enwise countries needed in the European Parliament!

Enlargement of the EU to the East is an important development that we applaud. And sex discrimination is both socially unacceptable and a barrier to growth... The fight for equality is never won... Equal treatment includes equal representation because it is vital for gender equality that women from both accession countries and current Member States take their full place in society. This must include the political arena. In the European parliament, only 31 per cent of existing members

are women. This may be reduced after accession, as women make up only 14 per cent of the shadowing delegates of the countries poised to join the EU... I strongly agree with Ms Diamantopoulou that at least a third of MEPs should be women. ... I have strongly encouraged women to stand in these elections and will encourage my colleagues in both member and accession states to do the same.

Source: Patricia Hewitt, UK Secretary of State for Trade & Industry in *Financial Times*, November 4, 2003.

As a general rule, in the HES and GOV sectors the highest levels of dissimilarity in the Enwise countries are due to an under-representation of women as researchers and an over-representation of women as support staff in R&D. In the Enwise countries, there are never more men than women in support staff positions in the HES and GOV research institutions. However, in the BES, men outnumber women among supporting staff in the Czech Republic, Hungary, Poland, Romania and Slovenia. The high Indexes of Dissimilarity in the BES for the Czech Republic and Hungary are also mainly a result of the under-representation of women among researchers.

■ **Gender limits promotion – Letting the excellence evaporate...**

The following data from the **Slovak Academy of Sciences** provide a good example of how the interface between horizontal and vertical segregation affects the different potential career outcomes for women and men. In this case, the percentages of women decline with seniority for Earth and Medical Sciences, but rise with seniority for the Historical & Human Sciences. In the Medical Sciences, where there are 40% women among all staff, women are under-represented among PhD holders and particularly among professors. The proportion of women declines as the grade rises, but this decline is sharper in the Earth and Space Sciences.

Table 3.12
Women among academic staff at the Slovak Academy of Sciences by degree of seniority, qualification and field of science in 2002 (percentages)

Section	Women in all staff	Women in all DrSc	Women in all Professors	Women in all researchers with qualification degree I (equivalent to grade A)
Earth & Space Sciences	17.1 %	9.2 %	8.9 %	7.7 %
Medical Sciences	39.9 %	11.8 %	7.7 %	19.4 %
Historical Sciences	41.9 %	19.2 %	24.2 %	21.7 %
Total	32.7 %	12.4 %	13.1 %	15.6 %

Source: Sedová et al, 2003 in Velichova, 2003.

Notes: Unit: head count

Earth & Space Sciences comprise Earth and Space Sciences, Mathematical and Physical Sciences, Information Sciences, Technical Sciences, Medical Sciences comprise Medical Sciences, Biological and Chemical Sciences, Agricultural and Veterinary Sciences
 Historical Sciences comprises Historical Sciences, Human Sciences, Culture and Arts Sciences
 Grade A Researchers comprise Doctors of Science and Professors

Concluding remarks

■ The 3% *Barcelona objective* and the BES

In 2002 there was widespread recognition that Europe needs to invest more in research at the European Council meeting in Barcelona, and the corresponding target of 3% expenditure of GDP on R&D by 2010 was set, of which two thirds should be privately funded. Given that the current EU-15 average expenditure on R&D is 1.93%³⁷ (European Commission, 2003d), and that the corresponding input for the Enwise countries ranges from 1.45% in Slovenia and 1.33% in the Czech Republic to 0.48% in Latvia, this will require a somewhat greater effort for Enwise countries³⁸.

The major part of the increase is expected to occur in the BES, which is still under-developed and under-resourced in most Enwise countries. In a context where the outlook for women in business is generally unpromising, there are some serious implications here for the critical mass of researchers, both women and men. At present 20% of all researchers in the Enwise countries are employed in this sector. Less than one fifth (the Enwise average) of all researchers in Bulgaria, Estonia, Hungary, Latvia, Lithuania and Poland are employed in market-led research. Such an increase in intensity is only achievable by raising the absolute numbers of researchers and this in turn is not possible without a major overhaul of the infrastructures and organisations that accommodate them. There are signs that the BES is performing in the Czech Republic, Romania and Slovenia. In **Romania**, which boasts 11% of all Enwise researchers, there are the highest proportions of women and men in the BES, but the lowest overall R&D expenditure per capita researcher (6 301 Euro) and lowest for the BES (8 854 Euro). Furthermore, an exodus of researchers, both men and women occurred between 1998 and 2001 (European Commission, 2003b). Conversely, in the **Czech Republic** and **Slovenia**, the researcher population has been stable over the last few years and R&D expenditure is comparatively high, but women are less well-represented, suggesting that women are given the cold shoulder where the rewards and possibilities are more attractive.

■ Settling for less – the GOV and the HES

If the BES is a new, slightly more promising but risky workplace for researchers in the Enwise countries, the HES and GOV research institutions provide safe but low-paid working situations for professional women who are also juggling their domestic responsibilities. Anecdotes provided by some members of the Enwise Expert Group indicate that women are also settling for these positions in order to avoid the high risk of unemployment. However, between 1998 and 2001, there was a decline in the numbers of researchers in the GOV³⁹ in the Slovak Republic, Romania and Bulgaria, as well as in the three Baltic countries. As a result of this group behaviour, women are underpinning the sectors, which in turn fail to provide them with the necessary working tools or motivating salaries.

37. The R&D intensity for EU-15 countries ranges from 3.65% in Sweden and Finland to 0.75% in Portugal and 0.67% in Greece.

38. See also Table 2.6 in Chapter 2.

39. BG, EE, LV (1997-2000); LT (2000-2001).

■ **The work-life *double burden***

The fact that women continue to shoulder the major part of domestic work in the Enwise countries is part of the explanation for this gender bias and underlies the differences that can be observed between the sexes in this Chapter. Although there is clearly political will to redress this, opportunities on the ground for men to assume more child care responsibility are ignored.

■ **Research in the Enwise countries**

Although there is huge potential for research to take its place as an engine for economic growth in the Enwise countries, all the sectors – each in its own way – need well-targeted investment to tackle the main problems highlighted in this Chapter, which can be listed as follows:

- Low R&D expenditure per capita researcher for all the Enwise countries and all R&D sectors;
- High proportion of women researchers in the Enwise countries and R&D sectors with the lowest R&D expenditure; unequal access for women researchers to R&D funds;
- Decline in the numbers of women and men researchers in the GOV sector and the BES during the last three to four years in many countries;
- Lack of knowledge about where non-research Professional women are concentrated;
- Poor representation of women in the senior echelons of University staff and academies of sciences;
- Low prestige of the Social Sciences and Humanities and weak investment in the *hard* sciences;
- Lack of data for pay gap and educational attainment of researchers and other R&D personnel;
- Cut-backs in child-care provision that could help alleviate the *double burden* and non-response to or lack of monitoring of existing policy measures.

Voting for Future or Holding the Plastic Bags?



“OK ladies! Now those who vote for the future should raise their hands!”

Source: Lendvai, Ildikó (2002). ‘Women on the stage and in the audience of politics’, *Népszabadság*, 01.02.2002, Budapest.



4.

How far is the target?

Measuring the participation of women scientists
from the Enwise countries
in the Research Framework Programmes

Introduction

Over the last decade, the scientific collaboration among the EU Member States and the Enwise countries has increased with the early decision to open several activities within the successive Research Framework Programmes (FP) to scientists from these countries. Indeed, Research programmes, together with Education and Youth programmes, were among the very first activities to be opened to the candidate countries (CCs), with a view to EU enlargement. Following an initiative of the European Parliament, special funds allowed financial support to be awarded for the participation of these countries in FP activities.

In 1992, certain FP3 specific programmes and activities (joint projects, support for conferences and networks, fellowships and COST activities) were opened to the Central and Eastern European countries on the basis of mutual advantage. The cooperation was further expanded in 1993, when scientists from these countries were able to join existing EU projects¹.

A completely new stage in cooperation between the EU Member States and the CCs² started in 1999, when the Enwise countries became full members of the 5th Framework Programme for Research and Technological Development (FP5) (1998-2002), with almost the same rights and obligations as the EU Member States. For the first time, the Enwise countries' representatives were invited to participate as observers in the FP5 Programme Committees and in the Scientific and Technical Research Committee (CREST), as well as in the various bodies involved in the implementation of FP5.

The launch of women and science activities at EU level coincided with the beginning of FP5. In February 1999, the Commission adopted an action plan to promote women scientists in European Research (European Commission, 1999): one of its main objectives was to mainstream gender in FP5, and, in this context, to achieve a participation level of at least 40% of women at all levels of research programme implementation and management. The Commission also declared its wish to be able to award at least 40% of the Marie Curie fellowships to women scientists.

One of the announced objectives of the Enwise Expert Group was to focus on the participation of women scientists in FP5 and, building upon facts and findings, to put forward recommendations on how to increase their participation in FP6 (2002-2006).

1. Project proposals had nevertheless to be submitted by Member States' co-ordinators.
2. i.e. the Enwise countries, plus Cyprus (and Malta in 2001).

An important stage for the Enwise countries: participating in FP5

"The Ministers acknowledged that, despite their qualities, the Accession Countries still have a long way to go before they achieve average figures of R&D investment comparable to those of the Member States. An important step on that path in the field of science was their participation in the 5th Framework Programme..."

Source: Warsaw Conference Ministerial Meeting "Central and Eastern Europe in the ERA" – Declaration, 25 November 2002.

Wishful thinking?

"...As a result, the Accession Countries are better prepared for the 6th Framework programme, while they are also more aware of the difficulties and challenges arising from this initiative."

Source: Warsaw Conference Ministerial Meeting "Central and Eastern Europe in the ERA" 25 November 2002 – Declaration.

This Chapter analyses the FP5 and first FP6 data that members of the Enwise Expert Group have been able to gather for their respective countries, either via national sources or via Cordis, the European Information Service web site of DG Research, or with the help of DG Research. The sex-disaggregated data that was available and analysed for this exercise covers mainly the bodies and panels set up by the Commission to implement and monitor both FP5 and FP6. Although not covering the whole possible range of FP5 activities, this data provides a solid basis for recommendations on how to improve the situation and the participation of women scientists in FP6.

The 5th Framework Programme (FP5)

The following analysis builds upon data collected for FP5 Evaluation Panels, External Advisory Groups, Monitoring and Assessment Panels, Programme Committees, National Contact Points and for Marie Curie Fellowships.

■ **FP5 Evaluation Panels**

Starting from 1999, researchers from the Enwise countries were invited to register in the Exsis³ database in order to become involved in the peer review evaluation process for project proposals submitted for FP5 funding. At the end of 2002, as shown in following Table 4.1, 675 women experts from the Enwise countries were registered in Exsis, representing just under 10% of all women registered in this database (as compared to 82% of women from the EU-15). It should be noted that the female experts from the Enwise countries have been more active in this registration activity (26% women vs. 74% men) than their EU-15 counterparts (17% women vs. 83% men).

According to data provided by Cordis⁴, 352 of the 675 women registered have been invited by the Commission to act as experts in the evaluation panels organised during the four years of FP5 activity (1999-2002). They represent 34% of all experts invited from the Enwise countries and 8% of all invited female experts (4 425); during the same period, 3 802 women from the EU-15 acted as evaluators (representing 22% of all invited EU-15 experts and 86% of all invited female experts). Compared to their male colleagues, women from the Enwise countries were thus better represented in these evaluation panels than their EU-15 counterparts.

3. Exsis - Experts sub-information system – DG Research database for the registration of FP5 potential experts.
4. Total reliability of the data on acting evaluators, building upon lists of evaluators delivered by Cordis and treated manually to be presented in this report, cannot be ensured since these lists contained several mistakes: names with no gender or no country link, one country present with two different acronyms, e.g. Sweden with SV and SE, etc.

Table 4.1
Enwise female experts registered in Exsis (in December 2002)
& acting as evaluators (1999-2002)

Column	A	B	C=(B/A)	D	E	F=(E/D)	G=(E/B)
Country	Exis Experts (HC)	of which Female (HC)	of which Female (%)	Acting Experts (HC)	of which Female (HC)	of which Female (%)	Used female pool (%)
Bulgaria	213	96	45 %	99	66	67 %	69 %
Czech Rep.	298	45	15 %	148	34	23 %	76 %
Estonia	76	18	24 %	45	9	20 %	50 %
Hungary	508	103	20 %	250	85	34 %	83 %
Latvia	96	29	30 %	39	15	38 %	52 %
Lithuania	102	25	25 %	40	12	30 %	48 %
Poland	641	157	24 %	225	61	27 %	39 %
Romania	370	130	35 %	77	33	43 %	25 %
Slovak Rep.	151	29	19 %	71	18	25 %	62 %
Slovenia	123	43	35 %	52	19	37 %	44 %
Enwise-10	2 578	675	26 %	1 046	352	34 %	52 %
EU-15	32 873	5 713	17 %	17 257	3 802	22 %	67 %
Exsis	38 341	6 978	18 %	19 624	4 425	23 %	63 %

Source: European Commission – W&S Unit and Cordis.

Notes: HC = Headcount

Difference in total numbers between Total Exsis and Total [EU-15 + Enwise-10] = rest of the world, including other CCs

A further relevant comparison can be made between the numbers of women experts having served as experts (*column E* of Table 4.1) with their numbers in Exsis (*column B* of the same table): it gives an indication on how the available *pool* of women experts was *used* in these FP5 evaluation activities. On average **52%** of the women from the Enwise countries served as evaluators, as compared to a higher 67% for the EU-15 women. Looking at the presence in Exsis of women from each Enwise country, a similar pattern emerges to the one described in Table 3.1 of Chapter 3, where 66% of all women researchers of the Enwise-10 come from only three countries (Poland, Hungary and Romania). Indeed, 72% of women of the Enwise-10 registered in Exsis come from the same three countries, plus, surprisingly, Bulgaria. Nevertheless, these apparent good performances should be modulated by the fact that these 675 female experts in Exsis only represent⁵ 0.8% of the 80 794 women researchers for these countries.

As for the gender distribution per country, Bulgaria stands out again with a high 45% of women among all Bulgarian experts in Exsis, and to a lesser extent Romania (35%) and Slovenia (34%). Among those who actually participated in the FP5 evaluation panels, again Bulgaria can be highlighted with a high 67% of women among all Bulgarians having served as evaluators. This seems in line with the strong presence of women researchers in the public Bulgarian R&D, as seen in previous Chapter 3.

5. With a high 2% in Bulgaria and 1.8% in Slovenia but a lowest 0.5% in Poland and Lithuania.

The number of acting female evaluators from each Enwise country should also be compared to their available female *pool* in Exsis. This shows that 5 Enwise countries recorded higher percentages than the average 52%, among which Bulgaria is again among the highest; with 66 acting female evaluators representing 69% of the available Bulgarian *pool* in Exsis (96); but in this respect, Hungary also stands out, with the 85 female acting evaluators representing 83% of the available Hungarian *pool* (103). Only Romania with a 25% *used pool* (33 acting of 130 registered) and to a lesser extent Poland with a 39% *used pool* (61 acting of 157 registered) show a different pattern. It might be relevant to investigate, with the help of the Commission, whether specific factors have contributed to make female experts of some Enwise countries more *visible* than others.

■ FP5 External Advisory Groups (EAGs)

28 experts from the Enwise countries were invited by the Commission to participate in one of the 17 FP5 EAGs, representing less than 10% of all invited experts. All Enwise countries were represented, with Hungary and Poland having 6 experts each. Among these small numbers, only 6 women experts⁶ from the Enwise countries were invited to work in the 5 following EAGs: *Control of infectious diseases* (1 Czech), *Health, food and environmental factors* (1 Latvian), *Sustainable mobility and inter-modality* (1 Hungarian), *The ageing population* (1 Estonian, 1 Romanian) and *Sustainable agriculture, fisheries and forestry* (1 Polish). Although one of the Commission's objectives, when setting up the EAGs, was to ensure both geographical and gender balance of the various groups, this objective was obviously not met in FP5 EAGs.

■ FP5 Monitoring and Assessment Panels

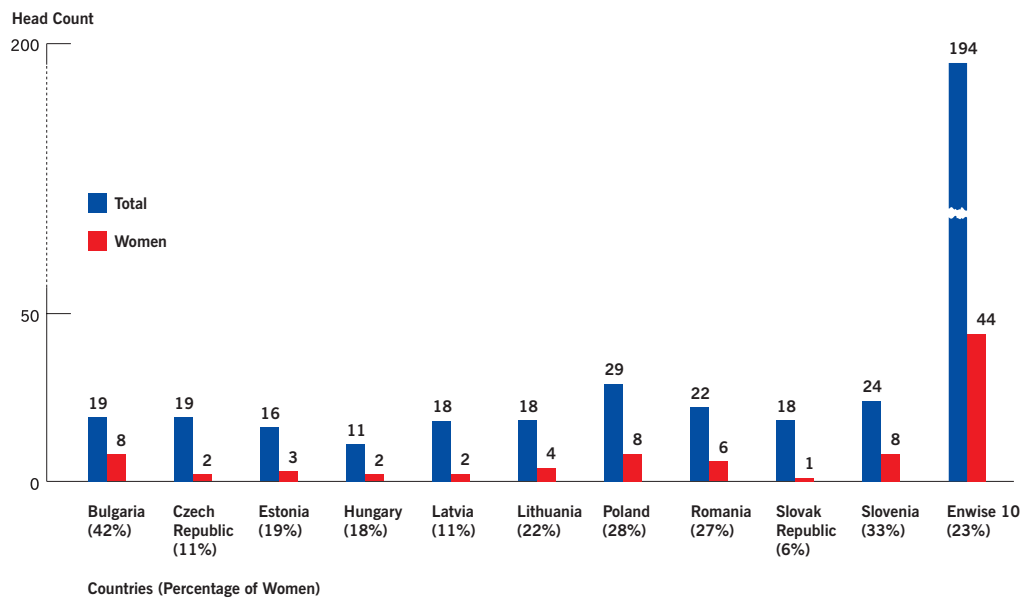
The total number of experts from the Enwise countries in the various FP5 monitoring and assessment panels was very low. For example, no experts from these countries were involved in the FP5 5-year assessment panels. However, it should be noted that overall the number of experts involved in these monitoring activities is very small. Whether this low or non-participation is due to the fact that the involvement of the Enwise countries as equal partners in all FP5 activities was fairly recent, is a question for further investigation.

■ FP5 Programme Committees

Each Enwise country was asked by the Commission to nominate national observers and experts for the FP5 Programme Committees. Approximately half of the Enwise observers came from the national administrations responsible for the country's FP participation, while the other experts came from national research councils or academies of sciences.

6. Bulgaria, Lithuania, the Slovak Republic and Slovenia being represented only by men.

Figure 4.1
Female observers and experts from the Enwise countries in FP5 Programme Committees



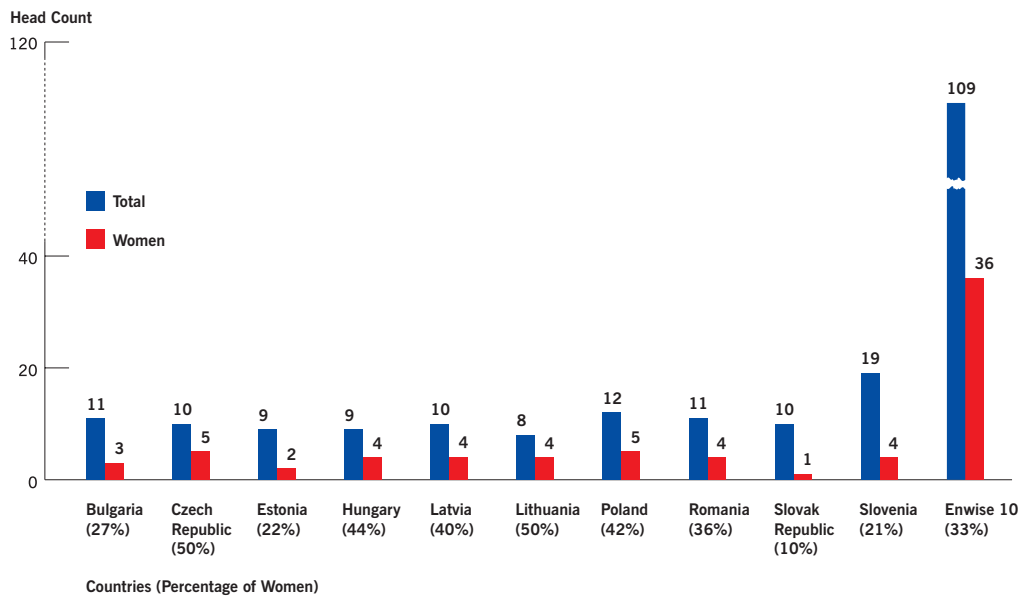
Source: European Commission - DG Research.

As shown in Figure 4.1, the proportion of women from the Enwise countries acting as observers and experts in FP5 Programme Committees was very low, with the lowest for the Slovak Republic (one woman, only!).

■ FP5 National Contact Points (NCPs)

At the request of the European Commission FP5, NCPs were established in each Enwise country. Their main task was to disseminate information to potential research project applicants about the possibilities of taking part in the different activities and to respond to the various calls for proposals. The responsibilities of the NCPs also included informing project applicants on the conditions of participation, providing help in finding co-operation partners and offering the necessary technical assistance for the preparation of the project proposals. NCPs from the Enwise countries were in many cases located in the responsible ministries. In Romania, all NCPs were under the auspices of the Ministry of Education and Research; the situation was similar in Hungary. In other Enwise countries, the national academies of sciences, universities, research associations or technological centres were the host institutions of the NCPs.

Figure 4.2
Female FP5 National Contact Points from the Enwise countries



Source: European Commission - DG Research and national data.

Looking at the gender composition of these NCPs, Figure 4.2 shows a satisfactory female participation (above 40%) for 5 countries, with parity for the Czech Republic and Lithuania, while only one woman was appointed as NCP in the Slovak Republic.

■ **Participation of female scientists in FP5 funded research projects**

As regards the data on the success rate of submitted project proposals and women researchers involved in the funded projects, several members of the Enwise Expert Group have reported difficulties in accessing sex-disaggregated data, due to the lack of data available at national level. Other countries could only rely on the data made available to them via Cordis. However, important discrepancies have been identified between the data recorded on Cordis and the data registered at national level. It also appears that the information on Cordis is constantly out-of-date. Good practice on data collection has been developed only in Latvia and Estonia. The system developed in the latter countries allows detailed information (including a breakdown by gender) on the submitted and the successful project proposals, as well as on the partners involved in the implementation of these projects at the national level, to be accessed at national level. Following Table 4.2 shows that the proportion of female FP5 project coordinators and leaders (29% in average throughout the various 178 successful Latvian projects) was quite acceptable in Latvia, even in fields such as information technologies (IST), energy and sustainable development (EESD) and innovation (SME).

Table 4.2
Female participation in FP5 successful project partners in Latvia

Specific Programme	Projects	Partners	Male	Female	Female (%)
QoL	31	34	16	18	53 %
IST	29	35	25	10	29 %
Growth	23	25	23	2	8 %
EESD	40	45	29	16	36 %
INCO	10	11	8	3	27 %
SME	12	23	16	7	30 %
IHP	20	20	15	5	25 %
Euratom	13	14	14	0	0 %
Total	178	207	146	61	29 %

Source: National Latvian NCPs data.

Notes: QoL = Quality of Life & Management of living resources
 IST = User-friendly Information Society
 Growth = Competitive & Sustainable Growth
 EESD = Energy, Environment and Sustainable Development
 INCO = Confirming the International Role of the Community Research
 SME = Promotion of innovation and encouragement of participation of SMEs
 IHP = Improving Human Research Potential & the Socio-economic Knowledge Base
 Euratom = Nuclear fission and fusion

“The funding assigned by the EU for the realisation of the Latvian FP5 successful projects was approximately 13 million EURO. The exact amount of funding⁷ coming to Latvia each year cannot be calculated, but it can be estimated that, every year, on average the sum of 2.16 million EURO was transferred (and still is) to Latvia. This amount represents approximately 5.88% of the total R&D⁸ expenditure in Latvia” (Bundule, 2003).

Romania, Hungary and Slovenia have confirmed the availability, at national level, of comprehensive data with regard to the number of submitted project proposals and successful projects, but without any gender breakdown of their data. It should be pointed out that, in Estonia and in Latvia, reports on the participation of their respective national organisations in FP5 have already been published, analysing the participation success rate and the nature of the participation, as well as pointing out the main problems, mistakes and obstacles to successful participation in the FP.

■ FP5 Marie Curie Fellowships (MCF)

One of the main FP5 activities to promote the mobility of researchers in the European Union was the MCF programme. However, the lack of information at national level concerning the *Young and Experienced Researchers*, who have been awarded an individual fellowship⁹, the relative

7. For the 1999-2002 successful projects – payments being received until 2004.

8. For example, in 2002 the total R&D expenditure in Latvia amounted 24 132 million LVL (~ 36 018 EURO).

9. Known as Category 30 for the Young Researchers and Category 40 for the Experienced Researchers.

Marie Curie Fellows in Bulgaria: on which data to rely?

Data concerning *FP5 Fellowships* is among the most difficult to access. The available data at the Ministry of Education and Science refers to 9 concluded Fellowships Contracts with the Commission, of which - 3 female, 3 male and 3 *not determined* holders (Source: Direction *Scientific Research*, March 2003). The Cordis database service identifies 4 Individual Fellowships in total for Bulgaria, 3 of which have female holders.

The Mobility Unit of DG Research provided

information about 10 Bulgarian Individual Fellowships (3 female and 7 male scientists). According to the 2000 Annual Report on MCF provided by the Commission, 14 Bulgarian scientists have been awarded Individual Fellowships (13 in Cat. 30 and 1 in Cat. 40), while the 2001 Annual Report on MCF mentions 12 successful Bulgarian scientists (6 in Cat. 30 and 6 in Cat. 40).

Source: Sretenova, 2003.

share of women scientists in each individual fellowship category, as well as the lack of any possibility of tracing the development of the Marie Curie fellows' careers after their fellowships, has been stressed by almost all members of the Enwise Expert Group. Again discrepancies were observed between the data available at national level and information available at European level, in particular in the MCF National Reports for 2000 and 2001.

According to the data available at both national and European level, it appears that from all the Enwise countries only male applicants have been successful in the *Experienced Researcher* category. With regards to the *Young Researchers*, the number of individual fellowships awarded to researchers from the Enwise countries was small. Only Estonia, Latvia and Romania were able to provide sex-disaggregated data on the number of awarded individual fellowships. In Estonia, 6 young scientists were awarded a fellowship, of whom 3 were women. In Latvia, only two applicants were successful, both of whom were male. Greater activity was observed in Romania with 32 successful proposals, 10 of which were submitted by young female scientists.

The 6th Framework Programme (FP6)

In view of enlargement, FP6, launched in November 2002, represents a new stage in the development of co-operation activities in the field of RTD. The association of the Enwise countries to FP6 took the form of a *Memorandum of Understanding* negotiated and ratified by each country. Taking the European Research Area (ERA) as a focal point, with an emphasis on new instruments such as Networks of Excellence and Integrated (research) Projects, FP6 is meant to be the main tool for structuring ERA, striving to promote greater efficiency and to build what the Commission calls *critical mass*, to ensure that funded projects have a lasting impact on the scientific and technological landscape. The scope of the available mobility opportunities has been largely expanded from FP5 to FP6, where the broadened human potential activities place the Enwise countries on an equal footing with the EU Member States, especially with regards to the transfer of knowledge host scheme and the reintegration grants. For the Enwise countries, the Marie Curie activities are considered as key factors in ensuring the development of the European Research Area and promoting their integration. In parallel to this further and closer involvement of the Enwise countries in FP6, women and science activities, building upon sustained gender mainstreaming and monitoring of FP5 activities, have now received a stronger visibility since gender dimension has been enshrined in FP6.

The data analysed below are building upon the first year of FP6 implementation and therefore only focus on the presence of women from the Enwise countries in the panels and assemblies treated under previous section on FP5.

Women in FP6

"Activities under the Sixth Framework Programme should strive to increase the role of women in research and to improve information for, and dialogue with society, as well as promote participation from the outermost regions of the community".

Source: Regulation (EC) No 2321/2002 of the European Parliament and of the Council of 16 December 2002 concerning the rules for the participation of undertakings, research centres and universities in, and for the dissemination of research results for, the implementation of the European Community Sixth Framework Programme (2002-2006)-30.12.2002.

■ FP6 Evaluation Panels

In December 2002, a call for expert evaluators was launched with a view to establishing a new database of independent experts to assist the Commission's services in evaluating, monitoring and reviewing the projects. The so-called Expert Management Module (EMM) replaced Exsis. As was the case for FP5, researchers can register individually. In addition, FP6 offers the possibility for research organisations to recommend scientists to be included in the EMM database.

As shown in Table 4.3 below, the number of female researchers from the Enwise countries registered in the EMM (1 009) is already higher, after just one year of FP6 activity, than those registered in Exsis during the entire duration of FP5 (675). They represent 14% of all women registered in the EMM database (it was 10% in Exsis) to be compared with a high 73% for women experts from EU-15; and also 33% of all currently registered experts from these countries, which compared to the EU-15 female presence in EMM (23%), shows that they have been more pro-active in registering than their EU-15 counterparts.

Table 4.3
Female experts from the Enwise countries registered in EMM database (October 2003)

Country	Of which Female (HC)	Of which Female (HC)	Of which Female (%)	Female in Exsis (HC)
Bulgaria	255	143	56 %	96
Czech Republic	253	52	21 %	45
Estonia	91	33	36 %	18
Hungary	378	96	25 %	103
Latvia	47	12	26 %	29
Lithuania	131	33	25 %	25
Poland	826	247	30 %	157
Romania	712	305	43 %	130
Slovak Republic	129	28	22 %	29
Slovenia	190	60	32 %	43
Enwise-10	3 012	1 009	33 %	675
EU-15	22 528	5 231	23 %	5 713
EMM	29 541	7 268	25 %	6 978

Source: European Commission- DG Research.

Notes: HC = Headcount

Difference in total numbers between Total Exsis and Total [EU-15 + Enwise-10] = rest of the world, including other CCs

While a constant strong Bulgarian female presence should be highlighted (56% of all Bulgarian experts), it is also interesting, if one compares the EMM figures to those in Exsis, to note, on the one hand, a significant mobilisation of the Romanian, Estonian and Polish women and, on the other hand, the need to still mobilise Latvian, Hungarian and Slovak women. It will be essential to gather and to analyse, when available, information on how the Commission will draw upon these available pools of female experts from the Enwise countries. The issue is crucial for women's real participation in the FP6 evaluation process.

■ FP6 Advisory Groups (AGs)

Contrary to the rather encouraging results within the EMM database, the presence in FP6 AGs of both Enwise countries' representatives, and among them of women, has little changed in comparison with that of FP5. Until now, only 27 experts (28 in FP5) have been invited from the Enwise countries from a total of 286 members, which represents less than 10% of the members. All Enwise countries are represented. Again, only 5 women representing 4 countries (the Czech Republic, Estonia, Latvia and Lithuania) can be found among these 27 AG members. The Estonian member of the *Science and Society* AG is Professor Ene Ergma, the chairwoman of the Enwise Expert Group. The 4 other female experts are to be found only in the 2 following AGs: 3 in *Food quality and safety* and 1 in *Genomics and biotechnology for health*. This situation cannot longer be explained by the recent association of the Enwise countries to FP6 and should be considered seriously, given the role to be played by AG members in the creation of ERA.

■ FP6 Programme Committees

As was the case for FP5, the national governments from the Enwise countries were asked to nominate observers and experts for the FP6 Programme Committees. As indicated in following Figure 4.3, there has been a considerable overall increase (+52%) in the number of the FP6 Programme Committees' members from the Enwise countries, and namely of female members (+76%), in comparison with that of FP5, two notable exceptions being the Czech Republic and Romania. However the proportion of women among Programme Committee members reaches only 27% (it was 23% in FP5). This should ensure a closer association of observers and experts from these countries to the implementation of RTD activities funded under the FP6 specific programmes and priorities.

FP6 Advisory Groups – Rules

The 17 FP5 External Advisory Groups finished their work in 2002, and instead 12 new Advisory Groups (AG) were created to cover the research activities and areas of FP6. The AGs are run by the relevant Commission services, which in addition provide the scientific secretariat and take care of all practical arrangements. (...) Members participate in the groups in their individual capacity and each group ensures a balanced participation with respect to expertise, geographical origin (including candidate and associated countries), sector of origin and gender.

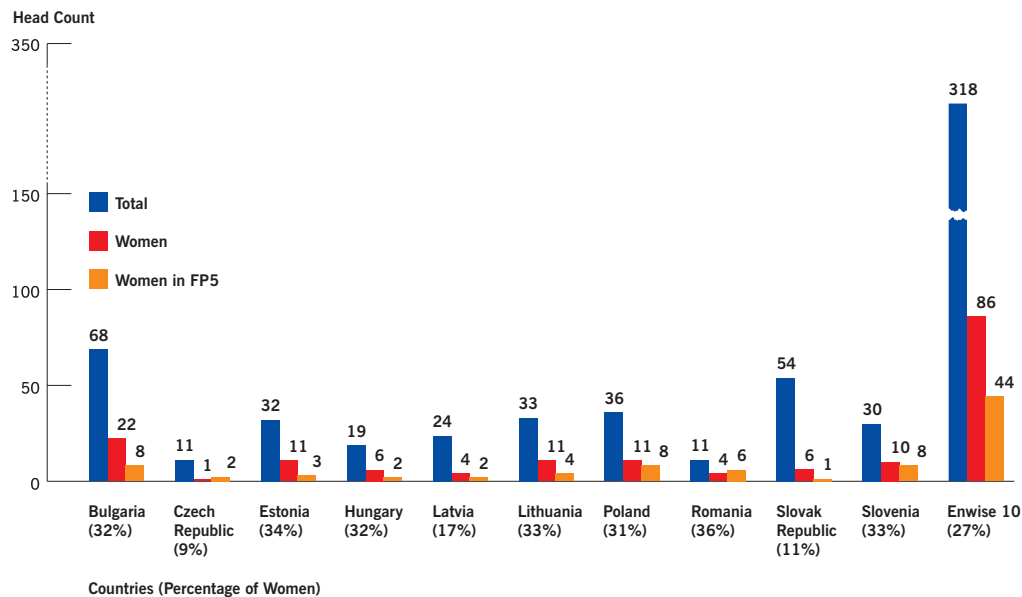
Source: Cordis.

FP6 Advisory Groups – Mandate

Under FP6, the Commission needs advice on the overall strategy to be followed in carrying out the priority thematic areas and activities of research, as well as on the creation of the European Research Area. Each member should therefore give advice to the Commission services in his/her relevant field of expertise and help to stimulate, if possible, the corresponding European research communities. The members should carry out their work in full knowledge of the European policy context, in particular of the research activities carried out at the national level and in support of European research policy initiatives.

Source: Cordis.

Figure 4.3
Female observers and experts from the Enwise countries in FP6 Programme Committees



Source: Cordis and national data.

■ FP6 National Contact Points (NCPs)

When compared to FP5, the overall number of FP6 NCPs from the Enwise countries, reported in following Figure 4.4, has almost doubled (208 vs. 109) and the overall number of female NCPs has almost tripled (100 vs. 36). This can be considered as good news for the dissemination of FP6 information in the Enwise countries, in particular in terms of raising awareness about the need to promote women's participation in FP6.

A broad responsibility for Programme Committee members

In order to ensure efficiency and transparency of implementation, the Commission will systematically make available to the Programme Committee comprehensive information covering all the proposals received for RTD actions as well as those eventually funded, regardless of their size. (...) This information will cover all stages, from calls for proposals, through the evaluation of proposed RTD actions, their selection, as well as the signature of contracts and their subsequent implementation. (...) It will in particular include an overview of each call and for each proposal: summary information; the evaluation panels' ranking and summary reports; and the Commission's intentions as to proposals to be rejected or to be retained for

negotiation; total budget and requested Community contribution. The Commission will provide information regularly, and at least annually, on: the contracts signed (including partners, areas, content, resources and Member States' participation) and on their major developments, together with overviews of programme progress and implementation achievements, as well as the lists of persons having acted as evaluators over the previous period once all decisions have been made on the relevant call.

Source: European Commission – DG Research – Clarifications on certain provisions of the rules of procedure for the Programme Committee of the FP6 Specific Programme "Integrating and Strengthening the European Research Area".

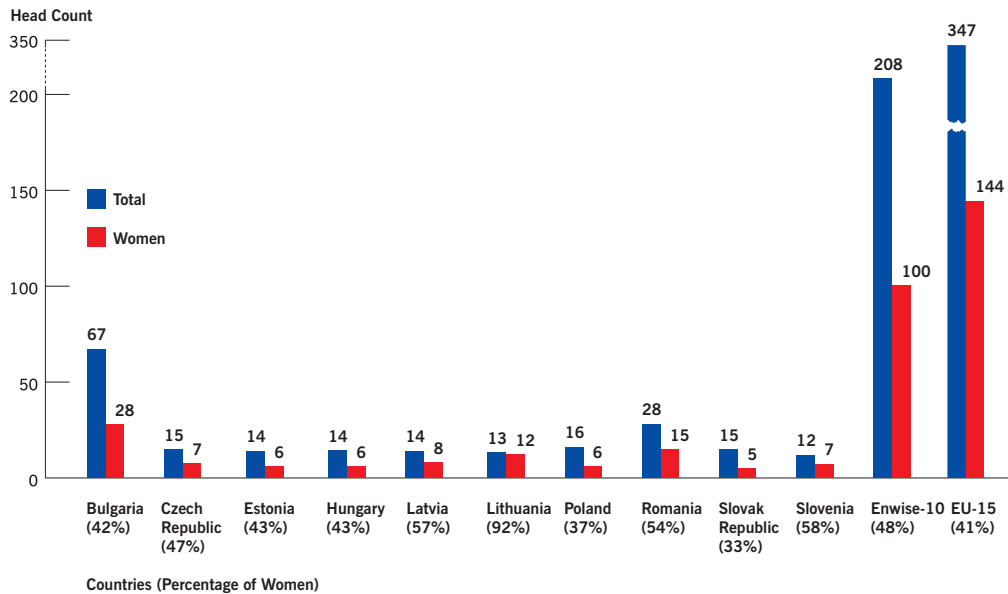
"Relying on FP6 NCPs..."

Among the indicative list of recommended tasks that FP6 NCPs should deliver is specifically mentioned the following: "Raise awareness for the Community objectives of increasing the participation of women in the Framework Programme and of strengthening

the link between science and ethics and between science and civil society."

Source: Guiding principles for setting up systems of National Contact Points for FP6- European Commission- DG Research.

Figure 4.4
Female FP6 national Contact Points from the Enwise countries



Source: Cordis and national data.

■ FP6 Mobility Centres

According to the recommendations of the Commission, each Enwise country, still with the exception of the Czech Republic¹⁰, has nominated Mobility Centre bridgehead organisations. It should be noted that the responsible persons for these centres are women in all the Enwise countries, except Slovenia. In Hungary, there are two bridgehead organisations, both represented by women. A problem of overlapping duties, which could have serious consequences if not associated with additional human and financial resources, is to be highlighted with regards to the Mobility Centres: in Latvia and Slovenia, the Heads of the respective Mobility Centres also act as National Contact Points. In Bulgaria, the Head of one of the two national Mobility Centres is also the National Coordinator for the Bulgarian NCPs. In Romania, the Head of the Mobility Centre is both the National Coordinator for the Romanian NCPs and a member of one FP6 Programme Committee.

■ Scientific and Technical Research Committee (CREST)

The worst situation regarding female participation from the Enwise countries concerns CREST, a body composed of Member States representatives advising the Commission and the Council on S&T related matters, where two observers represent each Enwise country. In most cases, these representatives are male, with the exception of Romania with two female representatives, and of the Czech Republic and the Slovak Republic with one female representative each.

10. Negotiations are currently going on with the Commission to establish a Czech Mobility Centre within the Czech Academy of Sciences.

Supporting the momentum: encouraging the participation and visibility of women scientists from the Enwise countries

In FP6, women and science activities form part of the Science and Society sub-programme of the Specific Programme *Structuring the ERA*. Compared to the FP5 situation, they have thus gained visibility and financial means, even if still in relatively modest proportions (as compared to the whole FP6 budget). Nevertheless gender activities can find additional support and funding through research activities implemented by the seven thematic priorities of FP6.

Women and science budget will be devoted to support further meetings of the Helsinki Group on women and science and of its sub-group of Statistical Correspondents, which both comprise delegates¹¹ from the Enwise countries, and some other networking activities. It will also allow the setting up of a European Platform of Women Scientists, which will be one of the main achievements in 2004. For the first time, a call for proposals on *gender research* will lead to funding of research in this area (up to 5 Mio EURO). Furthermore, Ambassadors will be nominated to raise awareness on the women and science issue.

As for the activities developed by the Enwise countries themselves, it should be underlined that two Enwise workshops, one on *Young Scientists*¹² that took place in Prague on 25 April 2003 and one on *Starting a debate with women scientists from the Balkan region*¹³ that took place in Brussels on 11-12 November 2003 were funded under the 2003 *Science and Society* FP6 budget. Two other important Enwise activities were introduced as proposals in response to the 2003 *Science and Society* open call and were successfully evaluated: the workshop *Debating bioethical issues with women scientists from the Enwise countries*¹⁴ that took place in Budapest on 2-3 October 2003 and an ambitious project¹⁵ co-ordinated by the Czech National Contact Centre - Women and science to expand their activities to the neighbouring countries with partners in Hungary, the Slovak Republic and Slovenia.

11. Lists of respective delegates to be found in Annexes 10 & 11.

12. See report on this workshop at the end of the present Chapter.

13. See report on this workshop at the end of the present Chapter.

14. See report on this workshop at the end of this Chapter.

15. Still under negotiation, when finalising this report.

An original initiative for women in science in the Czech Republic

The Czech National Contact Centre - Women and Science (in Czech: NKC - Ženy a Věda) was officially opened in Prague on 24 January 2002. It is an information, co-ordination and educational centre for gender issues in R&D. The project - developed by the Sociological Institute of the Academy of Sciences - is financed by the Ministry of Education, Youth and Sports of the Czech Republic. The reason for establishing the Centre was twofold: 1) to acknowledge the under-representation of women in science and develop actions, projects and measures in order to increase gender awareness among the scientific community and the participation and visibility of women in science, and 2) to examine from a gender perspective gender

biases in science, research institutions and scientific theories, contributing to develop feminist epistemologies. The Centre strives to develop networking among women scientists in the Czech Republic and abroad. It runs a database of experts for this purpose. It has developed a number of projects to increase the participation and visibility of women in science, and in 2003 launched a project addressed to young scientists. The Centre has also the aim at developing contacts and co-operative projects with similar institutions abroad, and provides information services on gender issues in FP6.

Source: Havelková, 2003.

In the coming years, with the end of FP6 and more importantly with the next FP, a crucial momentum could be achieved, by reaching a critical mass of activities to support stronger women and science dynamics in all the Enwise countries and in the Balkans. Obviously, only additional funding can make this momentum decisive and sustainable.

Concluding remarks – Limiting factors

Although everything seems to be formally in place to allow women scientists to participate in greater numbers and more fully in FP6, the members of the Enwise Expert Group underlined some obstacles that could hinder their full participation. Indeed, the dissemination and sharing of FP6 information and a broader diffusion of FP6 funding, which would be the pre-requisite for structuring the scientific research in all the Enwise countries and enable them to become full partners of ERA, are still problematic. From the facts and findings presented in this Chapter, some **limiting factors** to this full participation, in particular to that of women scientists from the Enwise countries, are listed below:

- **Acting as a FP expert in Brussels: an expensive activity...**

While the scientific interest of acting as an expert in any of the FP panels cannot be denied, actual participation of Enwise experts, in particular for women¹⁶, in the different FP6 evaluation and monitoring activities can be dramatically restricted because they lack the necessary financial resources. Since the Commission's rules are that travel and accommodation/subsistence expenses will, in principle, be paid after the meeting has taken place, each of the invited experts to any of the FP6 activities in Brussels needs about 800 to 900 Euro in order to be able to afford to take part in panel meeting and to carry out the assigned duties.

16. See also Chapter 3, where the gender pay gap is further addressed.

Costs of a typical 2-day scientific meeting in Brussels

To set the scene, let us first set out one component of a typical two-day expert meeting in Brussels, often on a Thursday and Friday. Scientists will travel to Brussels on Wednesday, since the meeting will start quite early on the Thursday morning and, in order to take advantage of lower airfares if they include a Saturday night in their trip, will travel back to their countries on Sunday. This means that 4 days' worth of subsistence – the cost of meals and hotel rooms – will be payable retrospectively by the European Commission. For such a typical meeting, which could take place perhaps 3 or 4 times per year, the scientist – or her/his institution – is likely to incur the following costs:

A 2-day scientific meeting in Brussels	
Typical approximate return airfare* including a Saturday night:	€ 400
Typical low cost hotel room for 4 nights @ € 80 per night:	€ 320
Meals x 4 days @ € 30 per day:	€ 120
Travel within Brussels (since low cost hotels are not in the EC area):	€ 20
Total:	€ 860

Source: Glover, 2003.

Note: * Calculated on basis of costing the cheapest flights from 5 Enwise capital cities to Brussels, using prices from www.expedia.com, August 21 2003, as follows: Warsaw (€ 291), Riga (€ 630), Vilnius (€ 344), Bucharest (€ 331) and Bratislava (€ 299).

As a rule, the Enwise countries do not have special funds¹⁷ to cover the travel and accommodation expenses of their national invited experts. It means that s/he has to cover all expenses related to her/his FP6 expert activity her/himself. If one compares the price of an Apex airplane ticket to and back from Brussels with the average monthly salary in the respective Enwise countries¹⁸, it becomes obvious why several invited Enwise experts have not been able to accept invitations to actually act as FP experts.

■ **FP6 on Internet: a discriminating factor?**

De facto, all FP6 information is accessible only via the Internet. If the members of the Enwise Expert Group have not reported on any specific gender discrimination in their countries, regarding access to the Internet or the availability of PC, many of them underlined the need for **more modern and high quality computers**. These IT difficulties were also met by the members of the Enwise Group themselves, since some of them have access to a PC in their institution only on a part-time basis, some have PCs, which cannot accept Word documents, but only Rich Text Format, others working with a home PC use an Internet web service that does not allow the receipt of large documents. Additionally recurrent interruptions of Internet accesses with these countries were recorded.

■ **Scissors diagram**

To some extent, the existing gender distribution of male and female experts from the Enwise countries between the CREST, Programme Committees and/or the AGs, on the one hand, and the NCPs on the other, reflects the famous scissors diagram used in the Helsinki Group report (European Commission, 2002) to highlight the vertical segregation facing women in scientific careers across Europe. As shown in Figures 4.1 and 4.2 (for FP5) and 4.3 and 4.4 (for FP6), the numbers of women experts declines at the decision-making level (i.e. CREST, Programme Committee or AG), whereas at the more technical level (i.e. NCP), involving advice, support activities and dissemination of information, the involvement of women reaches the same level as that of men and may even be greater.

Additionally, one should stress that the under-representation of women from Enwise countries in advisory roles is not consistent with the aims and objectives of FP6, where a stronger gender dimension has been included at all stages. If this under-representation was to continue as a rule, it could create a real problem for achieving the aim of promoting women scientists' role and place in the European Research Area.

■ **Multiple appointments and adequate human resources**

In some Enwise countries, only a restricted group of experts was in charge of representing their countries in the various FP5 bodies. They usually held more than one position and thus played several roles in this context. It was also the case, and still is, that several observers were/are nominated for two or more of the FP sub-programme committees. Besides the fact that it is questionable whether one person can perform all these various duties efficiently, conflicts of interests could also arise, notably where the

FP5 good practice for experts- evaluators from the Enwise countries

The activity of the FP5 Economic, Social and Human Sciences Evaluation Panel, within the Research Training Networks activity of the Improving Human Potential specific programme, can be referred to as a good practice, where advance payments were offered as an option to Candidate countries' experts together with the invitation to participate in this Panel.

Source: Sretenova, 2003.

17. In 2000, the Latvian Ministry of Education and Science established a special funding to cover the travel and accommodation expenses met by the observers and experts in FP Programme Committees. However, this special measure does not apply to any other category of Latvian experts.

18. See also Chapter 3, for further input on average salaries.

same person acts as Programme Committee member and/or NCP and/or AG member. Indeed, whereas Programme Committee members are bound by confidentiality and cannot disclose the information communicated to them by the Commission, NCPs are not subject to any confidentiality clauses and their task is quite the opposite – to disseminate information about FP activities as widely as possible. The most critical situation in this context can be found in those countries, where the double appointment (NCP acting as FP6 Programme Committee observer) is still the rule.

■ **Enlarging the circles of those who are *in the know*...**

Generally speaking, the experience of serving as a FP expert evaluator gives any researcher an opportunity to increase his/her knowledge on what is assessed at EU level as being a good European research project and thus on how to participate in the FP activities. There is no systematic monitoring at national level of whom, among the experts from the Enwise countries registered in DG Research databases (Exsis or EMM), served or will serve as an expert evaluator. This means that the scientific communities of these countries cannot fully benefit from the feed-back of those nationals who have actually participated in FP evaluations.

It was mentioned that, in none of the Enwise countries, was there – or is there – any information available at national level on the experts from these countries who were – and are – invited to participate in both the FP5 Monitoring Panels and EAGs, as well as in the FP6 AGs. This can be counterproductive for the scientific communities of the Enwise countries, where better synergies and efficient co-ordination of all FP actors still need to be reached, if a structuring effect is the ultimate aim to be reached.

FP6 Advisory Groups – Conflict of interests and independence

It is in the interest of the Commission, as well as of the wider research community, that members of Advisory Groups are not in a position to take undue advantage of or exercise undue influence on the implementation of FP6. To this end, it is agreed that members of Advisory Groups may not be involved in any way in the evaluation or selection of proposals for Community funding under FP6. Therefore, members of the Advisory Groups:

- may not be members of the Programme Committees or called as experts before the Programme Committees;
- may not act as evaluators of proposals submitted under FP6;
- may participate in consortia under FP6, either in their personal capacity or as representative of the organisations to which they belong.

Source: European Commission- DG Research, 2003.

Relying on robust NCP systems

Among the indicative list of recommended capacities that FP6 NCPs should fulfil to carry out their recommended tasks are specifically mentioned the following: "Have adequate human resources and equipment (e.g. informatics); be able to act as independent organisation(s), being committed to impartiality in delivering their services."

Source: Guiding principles for setting up systems of National Contact Points for FP6- European Commission- DG Research, 2003.

Young Scientists

25 April, 2003 - Prague, the Czech Republic

The workshop's objectives were to confront the views of the Enwise Expert Group on the situation facing the younger generation of male and female scientists with those of a panel of 27 male and female young scientists, invited from the Enwise countries, most of them former or current Marie Curie fellows; and to identify issues and obstacles that young scientists have to deal with in their scientific work, including the possible gender dimension. The topics debated ranged from **brain drain**, a theme that some social scientists in these countries term the *exodus* from science, to the **prestige and attractiveness of scientific careers** for young people, a theme much discussed by the European Union in the context of the 3% *Barcelona objective*¹, and to **gender issues in R&D**. The workshop also served as an open forum for young people to discuss and share their research experience and exchange opinions on potential solutions for the problems they face.

What emerged from the discussions in Prague was that young scientists are **confident**, successful and able to secure funding for their research, although not without some difficulties. A heated debate took place in one of the two afternoon subgroups on the issue of **equal opportunities in R&D** and the **position of women in science**. The different experiences of young men and women were approached: young women drew attention in particular to their being denigrated by older male scientists and to problems of work-life balance in a society with a stereotypical gender contract still firmly in place.

1. i.e. to attract 700 000 new researchers to the European Research Area by 2010.

■ "In many fields women are not taken seriously, particularly at a younger age."

Female, age: 25, economic and management sciences, Hungary.

■ "The responsibility for the household and the childcare is still considered to be a women's affair – women have many problems with conciliating their scientific carriers and family."

Female, age: 26, social sciences, the Czech Republic.

■ "Young women scientists have to decide on their scientific career and future life prospects under a double pressure. One problem is connected to much more difficult conditions of young women with small children (which is still the most popular life pattern to have at least one child at an early age) in the most important age for building a scientific career, by establishing oneself in the concerned scientific community and reaching higher positions and respect. The other one is a fear of taking (so needed and necessary) benefits with respect to their gender, not to be accused of getting the respected position only because of these benefits."

Female, age: 35, natural sciences, the Slovak Republic.

■ "Experience itself is usually well evaluated, as an advantage, but I have had several situations when looking for the job, where they say – we do not need your specific knowledge obtained abroad, just come and work as a sales manager."

Female, age: 26, law, Latvia.

■ "I would prefer to go back to my home country – Estonia because I want to give my contribution to Estonian science and to utilise my knowledge and skills to improve the quality of life of people. I think it is very important to study abroad and, after that, to bring the knowledge, the acquired methods and contacts home. Moreover, as Estonia is currently an EU candidate country, it is very interesting to work in such a rapidly developing country."

Female, age: 28, natural sciences, Estonia.

■ "A strong fear on behalf of *older* scientists, perceiving you as being better than them, due to you having gained new knowledge, being well accepted at the working group within the host institute and having established a lot of new contacts, exists. These skills should be considered an advantage, but I experienced it as a disadvantage. I would say that there is only one option to avoid problems: not to come back to the same institution. The other option that was offered to me was to change the field of research and this was not acceptable to me since a lot of knowledge/contacts I have gained would have been lost."

Female, age: 36, natural sciences, Slovenia.

■ "My absence from academic activity has been an unfair reason for not being able to obtain a new degree in the view of a career as a professor. My absence is viewed as a holiday not as a working period."

Female, age: 36, natural sciences, Slovenia.

■ "Lost contacts with *important* people and consequently no free places in home institutions, no possibility to publish, to teach, etc. because of a still very strong system of protégé."

Female, age: 26, law, Latvia.

■ "I prefer to find a career in the developed countries due to the substantially higher salary to living expenses ratio."

Male, age: 31, natural sciences, the Slovak Republic.

■ "I would prefer to find a career in the developed countries because of better professional opportunities and more satisfaction from the results of my work. Of course, the quality of life there cannot be compared to that in my home country and it has influenced my decision to leave."

Male, age: 32, mechanical engineering, Romania.

While a huge majority of young scientists appreciated their foreign experience and the expected benefits for their future career, this opinion was not unanimous. Indeed, a much debated issue was **reintegration**. Returning to their home countries with new knowledge and expertise, expecting to be able to share the newly acquired skills in their national environments, young people often face misunderstanding and fear of unwanted competition. Fellowships abroad also result in young people losing contacts with informal networks in their home countries, which further magnifies the obstacles that they face upon their return.

The issue of **brain drain** and **reasons for leaving science**, either altogether or for another country, was also explored. When asked directly about the reason that would propel them to leave science altogether, the first answer among both young men and women was **money**, along with various other reasons that could be grouped under the heading of *poor use of personal skills* or *loss of motivation for science*.

With respect to **external brain drain**, the answers given by the young women were more varied, mentioning – in addition to poor infrastructure, poor salaries and lack of motivation – the unfavourable political or economic situation in their home country or personal reasons.

■ “Unfortunately, I still cannot find a job in my home country and of course this is my biggest problem. This is solely due to the absence of any industry able to give some money for research in Bulgaria. The universities and the Academy of Sciences are too small a market for the number of very good researchers that the Bulgarian educational system produces every year. And the natural industrial continuation of the scientific career in other countries is not possible here. But this is only due to the collapse of our industry and our country. We need time to get over it. And any help from outside will be welcome. Probably an increase of the number of fellowships giving the opportunity to young scientists from Eastern and Central Europe to return home will help us a lot.”

Female, age: 31, natural sciences, Bulgaria.

■ “Another interesting point was scientist retention – especially of those scientists going to the States. I know that this was not the subject of the workshop but anyway it seemed a good subject to discuss. I think we should try to find reasons for it and make some changes in our educational systems and in science in general. I think, in most of the cases, money is not the reason for people to stay in the States. I think home is always home and money cannot buy you a home. Therefore, the key factor of retaining scientists is not money. I think the main reason that scientists leave their home country is that they are fed up with local frustration and the complexities of the environment. Don't get me wrong, I think studying abroad is great and necessary, but after it has finished, many would like to return home (to their family, friends) and work there, but they don't (or can't) for the previously stated reasons.”

Male, age: 23, computer science, Slovenia.

■ “The working conditions in my country are poor and the environment is not always intellectually stimulating due to the bad financial situation or just the working practices.”

Female, age: 30, social sciences, Poland.

■ “I have a new and completely different opinion as to what constitutes the term *value* and *quality of scientific work*. I also have a different perception of the scope of my research and its long-term implications. My work style is different now because I can distinguish what is really worth doing and what the research perspectives are.”

Male, age: 32, mechanical engineering, Romania.

■ “... I am more open to new trends, new teaching methods and I am more mobile and flexible in looking for grants, new jobs, etc.”

Female, age: 35, social sciences, Lithuania.

■ “I don't think that there are particular problems. More or less the same as everywhere - the dilemma between family and a very successful career, which is represented by the unequal gender ratio at for example the level of a professor exists.”

Male, age: 28, project manager, natural sciences, Latvia.

■ “I think that there is no problem particular to my country, just the *usual*: reconciliation of work and family, insufficient motivation and persistence, lesser visibility, paternalism, the culture i.e. style of work or sexist language.”

Female, age: 30, social sciences, Poland.

The two exceptions given by women to be the most important reasons for leaving were **intellectual stimulation and recognition of research work**.

Relations with the **generation of senior scientists** were also perceived as a problem for young people when returning home, especially with regard to the working environment, working practices and the approach taken to carrying out research.

The **perception** of the existence of obstacles to a woman's career development was very gendered. While six out of nine young women acknowledged the fact that there were obstacles, only three out of seven young men thought so. With respect to **equal opportunities in education and employment**, nine out of ten young men believed that equal opportunities existed, but only four out of nine young women thought so.

Some very stereotypical opinions were voiced during this workshop. These showed that some young scientists, both female and male, still hold gender stereotypical perceptions of men's and women's capabilities and work; this resulted in some of the young scientists, especially male, questioning the efficiency of equal opportunities policies. This was particularly keenly felt with respect to affirmative action. Some participants, especially young women and social scientists, pointed out this residual gender stereotyping among other participants.

The answers to the question of **whether scientists enjoyed prestige** in their country ranged across the entire spectrum from low to high, but most said it was medium.

■ "... There are no obstacles or anything preventing women from being educated and promoted. There may be some small problems in traditionally male-dominated environments – I think computer science is one of that kind. In recent year, we have lacked female students, so this possibly results in men being too patronising. I think this kind of attitude is not healthy and women who are more ambitious and want to do something consequently suffer."

Male, age: 22, computer sciences, Slovenia.

■ "...In education they do (enjoy equal opportunities) but in employment they do not. Women have to work much harder than men for the same position; they usually face prejudice concerning their abilities, and often they don't get the same opportunities, because, it is thought that they'll go on maternity leave anyway or they may already have children."

Female, age: 25, economic and management sciences, Hungary.

■ "At school, girls are expected to orientate themselves towards the humanities and social sciences and often are stereotypically not considered good enough in natural sciences and mathematics; women are paid less than men for the same work..."

Female, age: 25, social sciences, the Czech Republic.

■ "I'm afraid the social prestige is low. Scientists are often seen by the public as some kind of fools, clever but doing their jobs as a hobby, because their salaries are often way below the average (national) salary."

Female, age: 26, natural sciences, the Czech Republic.

■ "I think for older people *everybody teaching at the university* seems very important, but sometimes it is very hard to explain to my children, why some other mothers, who have not studied at university and are now secretaries in the satellite TV Company, get more money and can buy more Barbies."

Female, age: 36, medical sciences, Estonia.

■ "The scientist is viewed as a person with a small contribution to present developments and with a *possible* contribution into the long distant future."

Female, age: 33, engineering, Romania.

■ "...Probably people in social sciences, management, economics and law have medium social prestige; other scientists have a rather low prestige, just because it is not popular to be involved in science."

Female, age: 28, natural sciences, Estonia.

■ "It was a great opportunity to meet other young scientists coming from the East and to discuss our experiences. It seemed that even though we came from different countries, we all faced similar problems, similar concerns. The purpose of the meeting was to assess the situation of women working in research in the Eastern European countries, but our discussions had a wider perspective, addressing the problems that young scientists from these countries face."

Male, age: 25, natural sciences, Hungary.

■ "The workshop was interesting and, at least for me, educational... I was able to discuss with the participants ...They told me how they managed their families and family life: whether they took their husband/wife and children with them, had they left them at home, what kind of problems have they had to face as a family when they arrived in a foreign country. I had never thought about the kinds of problems before. Most of the time, the husband and wife are both scientists of the same age and both have to do their PhD. It was interesting to see how the husband/wife *subordinate* themselves or *suppress* his/her own ambitions and follow their partners to a post-doc study abroad. I think this family aspect of going abroad was the most interesting for me, because it made me think about it. Probably, some day I will also do a one or two year post-doc and all the information I gained at the workshop is more than valuable."

Male, age: 23, computer science, Slovenia.

Concluding remarks

When participants were asked to name three key policy initiatives that they thought would make a difference to the retention of young people in science in their home country, again low salaries and poor financial support for universities, poor funding of science were mentioned as the most serious problems to tackle. Another related problem mentioned was the lack of measures supporting young people in science. Participants stressed the need for:

- more opportunities,
- more exchange programmes,
- international co-operation,
- access to grants for young scientists (relax limits for post-graduate and post-doc grants),
- better and more competent supervision, as well as greater motivation by the high-level scientists.

After the workshop, participants were asked to reflect on what they had debated and to send feedback. Apart from having gained new knowledge about the Marie Curie Fellowships and other European Commission's programmes aimed at young people in science, young scientists mostly appreciated:

- the opportunity to come together and share experiences with other young scientists, from both *hard* and *soft* disciplines, from the post-communist countries, as in most cases they recognise themselves as being more oriented toward the West;
- the opportunity to talk openly, or for the first time, about gender issues and gender discrimination in science. Young women in particular appreciated the fact that they were able to talk openly with the young men about perceived discrimination in science or gender differences, and at a level where they felt they could be heard. Young men stressed that they were confronted by new issues and questions because, as some of them admitted, they had never thought about gender issues and gender discrimination in science and they had never thought that this could be any different for women.

■ “First of all, I must say the workshop made me think about issues I would not have considered, and helped me be aware of the incredibly wide range of possibilities potentially open for young students, but also the problems young scientists may encounter.”

Male, age: 29, social sciences, Poland.

■ “As a sociologist I was already familiar with many ideas, however, I have received many new insights during the workshop and also in conversations with other participants. Actually, I very much liked the selection of participants, because such issues usually are discussed in female dominated conferences or seminars. Therefore, there has not been a full picture of existing opinions (e.g. I had already forgotten that many men still think that women have a lower brain capacity...). Also, I have enjoyed the diverse profiles of scientific interests of the participants because I have spent the last ten years among sociologists that again has restricted the horizon (sociology in Lithuania is dominated by women and because of this maybe I don't feel the discrimination so much?).”

Female, age: 35, social sciences, Lithuania.

■ Personally, it was interesting to meet people from the Eastern block and to get to know their experience. All my life I have been rather oriented toward the Western world. This put into perspective the Western norms and values, reminding me about where I am coming from.”

Female, age: 26, social sciences, Germany (new Eastern Länder).

■ “I rate this meeting as very useful for myself. After such meetings, it is easier to see the global aspects of the problem, in this case related to the problems facing women in science.”

Male, age: 30, natural sciences, Bulgaria.

■ “The discussions opened new ideas for me. At least I saw some problems that I had never realised existed: for example, the problem of integration or reintegration due to a fellowship or even gender.”

Female, age: 26, mathematics, the Czech Republic.

■ “Finally, I would like to say that the meeting in Prague was very interesting: although I knew that the gender problem exists, for the first time I started to analyse the reasons for this issue myself.”

Female, age: 28, natural sciences, Estonia.

■ “I have found the workshop very interesting – however, I do think that women of my generation (of course, already being in science and having a job) do not perceive the gender problem.”

Female, age: 26, social sciences, Germany (new Eastern Länder).

■ “I should say that I have never thought that anybody cared about my opinion on all these things we have discussed in Prague's meeting... Or that my opinion about them can change anything, as I have felt very powerless and isolated during the last year. This meeting gave me the feeling that I am not alone; I am not the only one who has experienced these problems. This discussion has showed me that *my case* is not just an exception and I am not the only one who is experiencing difficulties with his/her reintegration in their home countries... At this meeting we have had the opportunity to be *heard* by somebody who has the power to change things and probably even to make some of them a reality. At this meeting we had the chance to be heard, to unify ourselves in a way, to be able to try to influence the policy of our governments, which in no case are very friendly towards the young and educated people in our countries.”

Female, age: 31, natural sciences, Bulgaria.

Debating bioethical issues with women scientists from the Enwise countries

2-3 October, 2003 – Budapest, Hungary

The workshop's objective was to assess the level of awareness on (bio)ethical issues among the female¹ scientific communities in the Enwise countries and to determine whether specific action needed to be taken in this field, in particular within the scope of FP6, which has a proactive approach to ethics, as regards preparing and submitting FP6 research proposals. It also aimed to evaluate the extent to which the gender dimension of (bio)ethical issues was considered in the Enwise countries and whether specific support was needed in this respect too.

To this end, the workshop brought together female hard and social scientists, female philosophers and lawyers, NGOs' representatives, journalists, members of ministerial department for gender mainstreaming, representatives of medical research councils and of ethics committees, representing in total 62 participants from 15 different countries², including representatives from both the *Women and Science* and *Ethics and Science* Units of DG Research.

Two specific topics were put forward: the ethical and gender issues of *stem cell research and tissue transplantation* and of *genetic testing, storage and use of genetic information*. The workshop included two plenary sessions and two parallel sessions in sub-groups to discuss each of the topics mentioned above.

Each of the sub-group debates was introduced by four keynote speeches, the aim being to represent different interest groups and areas of expertise. They were also meant to present the complexity of each of the issues from various angles, to elucidate the different aspects composing these scientific questions of public concern, to offer participants the possibility to share and confront their different opinions.

Presentations and consecutive discussions indicated that women scientists from the Enwise countries are highly concerned by the current ethical/ bioethical debates, with respect to both the heritage of the past and the new challenges created by the EU enlargement and by the ongoing processes of globalisation. Women scientists in the Enwise countries have strong and often controversial opinions regarding the recent development of biotechnologies, the deontological role of the scientist and the meaning of human life. However, broader public debate is still lacking and awareness campaigns about these crucial issues have as yet not really started in any of the Enwise countries.

Concluding remarks

- During the workshop, participants stressed that science is developing at a much faster rate than domestic legislation and regulations can keep up with, especially in the Enwise countries, where the transitional shift from communist regimes to market economies resulted in a radical transformation of previous political, cultural, socio-economic and legal environments. Therefore, a **stronger process of democratisation** is required, in particular in the bio-ethical field, where civil society, science and politics are interconnected,

1. The decision was made to convene a mainly female audience, since previous workshops, seminars or conferences on ethics related issues organised by the Ethics and Science Unit in 2002/2003 were attended, for the Enwise countries, mostly by male experts and speakers: this Budapest event was a first opportunity to hear from women.

2. From the 10 Enwise countries, plus Croatia and Serbia and from 4 Member States: Austria, Germany, Italy, United Kingdom; among the 62 participants, 9 men attended this workshop.

Ethics in FP6

Article 3 of FP6 states that: "*All the research activities carried out under the Sixth Framework Programme must be carried out in compliance with fundamental ethical principles*". Therefore, all proposals for research submitted to the European Commission for funding must include a section describing the ethical issues raised by the project regarding its methodology, the objectives and the possible implications of the results and the way they will be tackled. Participants in FP6 projects should respect the following international conventions and declarations: *Helsinki Declaration* in its latest version, *Convention of the Council of Europe on*

Human Rights and Biomedicine signed in Oviedo on 4 April 1997, and the Additional Protocol on the *Prohibition of Cloning Human Beings* signed in Paris on 12 January 1998, *UN Convention on the Rights of the Child*, *Universal Declaration on the Human Genome and Human Rights* adopted by UNESCO and should take into account to the opinions of the European Group of Advisers on the Ethical Implications of Biotechnology (1991 -1997) and the opinions of the European Group on Ethics in Science and New Technologies (as from 1998).

Source: Cordis.

where women -and in particular women scientists- could play an important role. A bottom-up approach and the consideration of public opinion were seen as the best means for the correct handling of (bio) ethical issues.

- **Transparency in bioethical issues** should also be ensured by a better representation of different stakeholders (women, social scientists, etc.) in ethics committees and by introducing the role and tasks of these committees to the general public.
- Participants underlined, with concern, **the lack or the insufficiency of regulation**, and of **public control**, on the out-sourcing of ethically sensitive biomedical research in the Enwise countries. Yet in the area of the exchange of genetic information, the responsibility of scientists/medical doctors and the position of women in related decision-making should also be considered. Concerns about the potential abuse of genetic data for national interests, or for the stigmatisation of minorities, were also expressed during the debates.
- Scientists, and in particular women scientists, should pay more attention to the **inter-relation and inter-action of gender and ethics** in new scientific developments.
- Scientists should not exclude themselves from the **education of the general public**, nor the media, the role of which was indicated as a priority. Science journalists should provide accurate information in the dissemination of scientific research and should participate in promoting adequate public information campaigns.

Recommendations

The following recommendations emerged from the Budapest workshop:

- Responsible state bodies (ministries, etc.) and/or public organisations should initiate public debates on (bio)ethical issues, with special emphasis on questions and topics concerning women. Awareness campaigns should also be launched.
- Ethics Committees should be made better known among the general public and their decisions should be more *transparent*.
- When selecting the members of Ethics Committee, a gender balanced composition (i.e., at least 40% female members) and the representation of different viewpoints (social science, philosophy, etc.) should be looked for to ensure a greater diversity in their composition.
- Womens' scientific communities should initiate cooperation among colleagues from different disciplines and promote public initiatives about gender and ethical issues in science. These should in particular focus on informing women on gender aspects of new scientific developments.
- Scientists should play their role in disseminating information on new scientific developments to the general public and in explaining the possible gender aspects of those results, so that the purpose of research and the systems that regulate it can be better understood.
- Science journalists are urgently needed to participate in the dissemination of accurate information on medical and biotechnological developments and in the *objective* explanation of possible risks. In this context, DG Research should strengthen its network of science journalists and feed it with more information.
- The Budapest workshop was intended as a starting point in a series of open debates related to science and society in different societal settings and countries. Further initiatives and follow-up are thus necessary in order to increase public and scientific awareness on ethical/bioethical issues, and it is of course essential to include a gender perspective in all further debates.

Ethical Review in FP6

The European Commission will systematically implement an ethical review for proposals dealing with (bio)ethically sensitive issues, in particular proposals involving the use of human embryonic stem cells in culture. Each proposal will be evaluated by an ethical review panel, composed by independent experts of different disciplines such as law, sociology, psychology, philosophy and ethics,

medicine, molecular biology and veterinary science. Each panel should ensure a parity of scientific and non scientific members, as well as a gender and geographical balance. Civil society representatives may be invited, for example, as representatives of patients' organisations or animal welfare organisations.

Source: *Cardis*.

Starting a debate with women scientists from the Balkan region

11-12 November, 2003 - Brussels, Belgium

The workshop had several objectives:

- to bring together women scientists from the Balkan region, for the first time, to discuss the issues of the position of women scientists in their respective countries and in the region as a whole;
- to initiate a debate on the needs and policy measures to be used to improve the position of women in science from the Balkans and their inclusion in the European Research Area; and
- to disseminate information of the relevant policy orientation and activities undertaken at international and European level, with a special emphasis on the activities developed by the Commission, in particular by the *Women and Science* Unit.

34 participants attended the workshop, including 16 women scientists, from *hard* and *soft* disciplines or gender experts, and from the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYRoM, Romania Serbia and Montenegro (including Kosovo and Vojvodina). Representatives of DG Research, DG Enlargement and DG External Relations took also part.

The first part of the workshop approached the topic from the perspective of political momentum relevant for EU policies towards the Western Balkans, the major one being The Thessaloniki Process¹, which is an important milestone in the perspective of further EU Enlargement. Although different countries in the region are at very different stages of accession, the general trend creates favourable conditions for the intensification of regional scientific cooperation, including the cooperation of women scientists themselves. This political framework supports Balkan's full participation in ERA and encourages Balkan countries to exploit the high level of motivation for social mobility and the good educational background of the population. It also acknowledges that reinforcement of the RTD capacity of the region should target the improvement of human potential, research infrastructure and institution building in the sector. Besides this political framework, another relevant framework for the workshop was the one related to the specific activities of *Women and Science* Unit within EU Commission, and Enwise activities, in particular.

The issue of *Women in Science*, as highlighted during the workshop, combines two equally important aspects: gender equality in scientific activity (including representation in different fields, sectors and levels, promotion, recognition, life-work balance etc.), as well as the development of general scientific and human resource potentials of the Balkan countries and their inclusion in ERA. The *Women in Science* topic could be approached as an issue of both mainstreaming gender equality in science, and of economic development and rational and productive use of women's human capital, which itself is a valuable resource for the process of Enlargement. These two perspectives are inseparable. Women's education and knowledge in the countries of the region could be a major motor for its transformation, both in economic and cultural terms, and thus should be recognised and supported by the EU. There is a clear connection between the process of providing a formal framework for gender inclusion, and the process of accession, or *closeness* to the EU. This means that *harmonisation* is very beneficial for gender mainstreaming in the Balkan countries, at least at the legislative level. The position of the country in

1. European Summit of 21 June, 2003.



relation to EU correlates with the quality and scope of specific programmes, action plans and institutional mechanisms for gender equality. However, Balkan reality in many ways still impedes women's full participation in the field of science.

The major topics in the workshop were the following: *brain drain* and communication with diasporic scientific communities, educational and professional segregation; institutional barriers for women in science; living and working conditions of women scientists; promotion, rewards and recognition; development of gender studies; research and creation, as well as gender sensitive knowledge; expertise in the field of gender studies and professionalisation of gender studies; improvement of the knowledge base on women scientists in the Balkans (statistics and research); professional organisations and networking of women scientists.

Concluding remarks

On the basis of different presentations (country-based and comparative) and discussions (held within two separate sub-groups and in a concluding plenary session), a set of general conclusions could be drawn:

- In most of the countries in the region there is generally **high inclusion of women** into the all scientific fields and at the all levels, and there is a **trend of increase** of their participation. However, there is still high level segregation of the educational profiles, and women students have higher inclination towards *soft* than towards *hard* sciences. In the cases of Croatia and Bulgaria, however, it should be noted that the inclusion of women into the hard sciences is higher than in many Western countries.
- **Wars, economic crises, UN sanctions** in the field of science (in particular for Serbia) and negative aspects of *transition* have greatly deteriorated much of the educational and research capacities in the region, decreasing also the quality of education. Being at the semi-periphery of Europe, many of the scientific communities in the region face the problem of limited access to the international professional community.
- **Brain drain** is still the major problem for the recovery of the scientific communities in the region, not so much from the perspective of the *loss* (because it is always *brain gain* elsewhere, the term *brain circulation* might thus be more adequate), as from the perspective of fast ageing of the scientific staff and fast decreasing critical mass in science.
- **Working and living conditions** of scientists in general are mainly unfavourable, in different dimensions (prestige, salaries). Living and working conditions for women scientists are even worse, because of the heavy double burden exacerbated by the economic hardship.
- One of the major obstacles for women in scientific careers, as well as in attaining gender equality in general (politics, economy), is connected to **deeply inscribed cultural barriers**: negative stereotypes about women and their roles and duties. Balkan societies represent the very patriarchal part of Europe. Women themselves, including women scientists, are not sensitive to the issues of gender equality and in many cases they hold many of the prejudices of their surrounding (so-called *internalised misogyny*).
- **Gender studies** in the region have started to develop: however, much of the teaching is based not on the research on women from the region, but on *knowledge transfer*, which often creates gap between the *theory* and the *reality*, and generates great difficulties in defining adequate and contextualised policy measures. Although the labour market, on the other hand, is still not receptive to gender experts and gender professionals, there is a growing need, based on EU and other international requirements, for gender aspects to be integrated into policy making. For any policy to be effective and efficient, it needs to be contextualised, which creates a very vivid need for more research-based knowledge on gender issues and requires active institutional support. The establishment of gender studies as an academic discipline demands to achieve high quality standards.

A precious capital

The social and cultural capital coming from higher education is one of the most precious institutional treasures of each civil society. Brain drain and brain gain may be calculated also by judging whether it reduces or increases these capitals, which means, of course, by qualitative considerations.

Professor Dr. Michael Daxner, University of Oldenburg, Germany, speaker and participant in the workshop.

A Balkan dilemma

The general dilemma of the Balkan region seems to be the following: Balkan countries aim to establish modern states approaching the issue from post-modern point of view. It is a real dilemma and a deep philosophical question: could we, from Balkan countries, jump over modernity and enter directly in post-modernity? My point is that nobody knows the answer to this question.

Dr. Nikolina Sretenova, Bulgarian member of the Enwise Expert Group and participant to the workshop.

The luxury to be both scientist and woman

During the long and painful period of transition in Albania, it can be considered as *luxury* to be a scientist in general and a woman scientist in particular. In this situation all individuals are trying to find ways so that they can benefit more, bring more income for their families in order to have a normal life.

M.Sci. Eglantina Gjermeni, Women's Centre in Tirana, Albania, participant to the workshop.

- Finally, women scientists are not sufficiently informed about ERA and the efforts related to the promotion of women scientists, nor about FP6 and its various activities or funding possibilities. Regional cooperation is under-developed, mobility within the region is low, and the general knowledge about EU windows of opportunities is insufficient. They are not aware of the issues of gender equality, they are not sufficiently organised within professional organisations, and networking among women scientists is under-developed within the respective countries.

Recommendations

All the participants of the workshop took an active part in defining recommendations and possible further steps. Recommendations can be grouped as follows:

- To gather and improve information on women in science, including sex- disaggregated statistical data, as well as databases on women scientists at national and regional level.
- To support research on women scientists, including qualitative and quantitative methodologies, at national and regional level (comparative research).
- To support gender studies development in the region and the creation of research-based knowledge on gender issues; to define possible labour market policies for gender expertise.
- To integrate gender issues and gender sensitive knowledge into education, to create *gender sensitive pedagogical curricula* and employ measures to achieve gender balance in different educational and scientific fields.
- To approach the issues of brain drain from the perspective of *brain circulation*, to connect with scientific diasporas and define tools and mechanisms to intensify cooperation with local scientific communities.
- To support regional scientific mobility, with a view to enhancing the critical mass of scientists and to stimulate scientists with the aim of retaining them in the region.
- To support the setting up of national, sub-national and regional contact centres in order to improve the information flow in the region, especially in relation with FP6 activities. This should include the creation of FP National Contact Points in the countries of the region.
- To develop networking; to establish and/or upgrade electronic networks; to enhance different modes and aims of networking (mentoring schemes, for example, regular regional channels for the exchange of the information...).
- To organise regular regional conferences of women scientists.
- To develop innovative mechanisms for the support of women scientists by public bodies (Ministries of Science, i.e.). To have national administrations responsible for R&D policies more involved in disseminating information on FP activities.
- In order to make the work of women scientists more visible, inside and outside the region, to allocate a special fund for the publication of women's research works, as well as for women's participation in different European and international conferences.

Suggestion for a regional Placement Office

Both in academia and private enterprise, it would be better to allocate scientific capacity from the region than to lose it for the region, only because the country of origin can offer no adequate positions. Synergy in research and development must create synergies in labour administration. A regional Placement Office could solve some related problems.

*Professor Dr. Michael Daxner,
University of Oldenburg, Germany,
speaker and participant in the workshop.*



5.

Fostering the talents
and knowledge of women scientists
from the Enwise countries
Recommendations

The mandate of the Enwise Expert Group was to put forward recommendations on how to **enhance the role and place of women scientists from the Enwise countries in the European Research Area (ERA)**, and obviously since FP6 is meant to be the main tool for focusing and integrating research activities in ERA, as well as structuring and strengthening its foundations in the EU Member States, one other very relevant objective of this report is also to put forward recommendations on how to **increase the participation of women scientists from the Enwise countries in FP6**. Additionally, since a strong emphasis was put by the EU on the **3% *Barcelona objective*** of March 2002, the members of the Enwise Expert Group found it relevant to include in their recommendations some steps to ensure that women scientists from the Enwise countries, and in particular the younger generation of them, would take an active part in this collective European endeavour.

The recommendations are clustered around the various partners, without whom no progress can be made in improving the situation facing women scientists in the 10 Enwise countries:

- Council of Ministers and European Parliament,
 - European Commission,
 - R&D national policy makers,
 - Universities and scientific institutions,
 - Business enterprises,
 - Media,
 - Women scientists and women's associations.
-
- **Council of Ministers and European Parliament**
 - First and most important of all, the promotion of women and science in the Enwise countries needs **ongoing political support** from the Council of Ministers and the European Parliament.
 - Support is needed from the Council of Ministers and the European Parliament in order to ensure that **adequate** and **modern** research infrastructures (including the up-grading of IT ones) can be available in the Enwise countries, – as expressed by the ITRE Committee in October 2002 (European Parliament, 2002) – as a prerequisite for deriving optimal benefits from the FP.
 - Support is needed from the Council of Ministers and the European Parliament for **upgrading gender equality** and gender mainstreaming in EU R&D policies, with a special attention to the Enwise countries.
-
- **European Commission**

The recommendations to the European Commission can be clustered under four headings: data collection, information, special action to encourage women's participation in FP, and, last but not least, sustained support to women and science at EU level.
-
- **Data collection**

The European Commission should ensure **access to data** about panels and all other groups involved in FP6 implementation, proposals and contracts.

These data should be broken down by sex and by country. They should be **reliable**, frequently **updated** and delivered within **reasonable delays**. This is a prerequisite for monitoring progress of women's participation in FP6. In the course of its work, the Group noticed discrepancies between data available in DG Research and those displayed on Cordis.

■ **Information**

- NCPs of the Enwise countries should be **trained on gender issues and gender dimension** in FP6.
- They should provide wide dissemination of information about EU funding opportunities and projects at national level, including through interviews in daily newspapers and other national media. They should ensure a **significant participation of women in all FP6 information events**.
- **Helpdesks** should be established to support women scientists in taking part in FP6 projects (e.g., pre-screening of proposals, English proof-reading, etc.).
- Given the current **IT weaknesses** in the Enwise countries (with the exception of Slovenia), NCPs should ensure access to the relevant FP6 information for the scientists who are not well equipped.
- The Commission should improve the **visibility of calls for proposals** in the area of women and science/gender related topics in FP6, with special attention to the Enwise countries.
- The Commission should disseminate **best practices** references by publishing achievements of projects co-ordinated by women or having a significant number of women as partners.
- The Commission should ensure that women scientists are properly informed of **EC organised events**, such as IST-2002. It should ensure a fair balance between men and women among speakers and participants. Special sessions for women scientists should be organised to allow them to network. Childcare facilities should be provided on site by the Commission to allow scientists with young children to attend. Special funds to promote the participation of women and young scientists coming from the Enwise countries and the Western Balkans should be made available.

■ **Special action to encourage women's participation in FP**

- Special funding should be provided for **training** women scientists from the Enwise countries in the field of proposal preparation and project management.
- **Mentoring schemes** should be developed, where experienced women researchers help their younger colleagues in preparing FP6 proposals, getting fellowships, etc.
- Special attention should be paid to **equal opportunity** when deciding on **grants** related to FP6 participation.
- Guidance and training should be provided to scientific institutions in developing the **Gender Action Plans** of the Integrated Projects and Networks of Excellence.
- Systematic **advance payments** to experts from the Enwise countries and the Western Balkans should become common practice.

- The Commission should ensure a **stronger representation** of women scientists from the Enwise countries in **FP6 Advisory Groups**.
- The pool of women scientists from the Enwise countries, registered in the evaluators database, should be scrutinised by nationality and field of science, so that their **participation in the evaluation panels can be optimised**.
- **Continued support to women and science at EU level**
 - The Commission should continue to **support the Helsinki Group**, with a special attention to the follow-up of the Enwise report. Helsinki delegates should be asked to submit regular reports with up-to-date information on the situation of women scientists in their respective countries.
 - The Commission should facilitate **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.
 - The Commission should support **regional co-ordination centres** for women and science (using national co-financing).
- **R&D national policy makers**
 - Special attention should be paid to implementing a **gender mainstreaming approach in the national education policies**, from elementary schools to higher education institutions; it should point to equal rights of both men and women, and show clearly *positive differences of the two sexes*, necessary for a balanced development of society.
 - Summer schools and mentoring programs for high school children should be organised in order to **attract girls in science**; young women scientists should be mobilised in these schemes to present some of their own experiences as women scientists.
 - **Separate programmes** should be provided for girls and for boys in different scientific disciplines (e.g. for girls to promote technical disciplines).
 - There is a need to deepen the **knowledge base on the restructuring** of R&D systems in the Enwise countries; research in this field should be supported.
 - **Structural funds** should be mobilised to **improve ICT** and other working technical facilities so that valuable brainpower is not lost due to poor equipment.
 - A **department** and/or a person in the responsible ministry for research (e.g. the Ministry of Education or the Governmental Office of Equal Opportunities in Hungary) should be established or appointed with the responsibility of **promoting women in science and gender equality in research**.
 - **Steering Committees on Women and Science** should be established in all Enwise countries with a formal mandate, ensuring co-operation between all stakeholders involved in promoting women and science.
 - The **representation of the Enwise countries in the Helsinki Group** should be revisited in order to maximise the added value of the Helsinki Group activities in the national contexts.

- **Family-friendly policies** at University, HE and public and private R&D institutions should be stimulated by national authorities in order to improve the social and working conditions of women scientists in the Enwise countries.
- A careful long-term national policy, which could be supported by EU funds, should be developed in order to **support the younger generation** of scientists: promoting fellowships and mobility opportunities with the overall information databases at a large scale, creating a Network of European Young Scientists in order to follow up their career after the fellowship period, developing re-integration programmes for young people returning back to their home country.
- Re-qualification programmes for **senior scientists**, who have built their career during communist times or in the poor economic conditions during the transitional period, should be developed to enhance their scientific potential, in order to overcome existing weaknesses (updating knowledge, language courses and IT skills).
- **Contact Centres for women scientists** should be set up in order to:
 - encourage women to participate in scientific research,
 - promote programmes aiming at enhancing women's participation in scientific research and to increase numbers of scholarships for women,
 - increase participation of women in FP6,
 - organise seminars for women scientists to highlight the situation of women in different scientific disciplines in their own country and all over Europe, as well as to exchange best practices references on women and science adopted by other countries (e.g. in the UK or in Germany),
 - to support the dissemination of the Enwise report at grass-root level to give follow up to its recommendations,
 - to develop web-pages with information on how to apply for different national and EU activities and programmes.
- **Progress** towards gender equality in science should be **monitored** and presented in national reports, taking into account the economic perspective, i.e. add the *Honeypot* indicator to the list of Benchmarking indicators.
- It is necessary to examine the **pay gap** in view of the sharp vertical segregation that exists between the sexes in scientific systems. This information will also enable a comparison with other knowledge-intensive fields, so that the attractiveness of scientific careers in the Enwise countries and beyond can be monitored.
- Research on women scientists, their **careers and life strategies** should be supported.
- **Programmes for scientific co-operation** between the scientific communities and scientists issued from the diaspora of the respective Enwise countries should be developed.

■ Universities and scientific institutions

- Universities and scientific institutions should establish a **department**, or appoint a person, responsible for developing actions **promoting women and/in science issues**, and for implementing an **Equal Opportunities employment policy**.
- Equal opportunity in **recruitment** and **promotion** procedures of scientists in the Enwise countries should be ensured.
- **Scientific evaluation** should be based on more objective criteria, instead of a referral system (which is an extremely cliquish, unfair and traditional system!!!), or dependent on physical presence (conferences, for example).
- Research institutions should ensure **family-friendly working environments**, including re-training after maternity leave to prevent breaks in careers and tele-working facilities. It is very important for men to be included in these innovative schemes, to legitimise new behavioural models. Men should be targeted in special campaigns.
- Universities and scientific institutions should develop **gender sensitive indicators** to monitor the development of the gendered structure of their science staff.
- A **new post-doc system** for young scientists should be introduced. In these new schemes, women should be encouraged to apply. Special funding for female graduate students and post-doctoral researchers ought to be provided.
- Given the importance of the international dimension in building a scientific career, women researchers should receive **financial support to participate in international events and actions**.
- **Women's and gender studies**, as well as **gender research** should be supported. Gender research should investigate, in particular, both qualitative and quantitative research connecting the communist and post-communist times, in order to learn not only about women's subjective perception of their lives and their everyday strategies, but also about the diversity of their lives and strategies. Over-generalisation and stereotypes of *a woman* (or *a man*) in the Enwise countries must be avoided.

■ Business enterprises

- Business enterprises should encourage women's participation, through adopting **family-friendly working environment**.
- Further analytical research into the working lives of women in **market-led research** in the Enwise countries is needed.

■ Media

- Media should **improve the image of science** and develop awareness campaigns in the Enwise countries. This image should be more attractive to women and the younger generation, revealing the creative character of scientific and research work, its imaginative power, its adventurous potential and a unique enchantment of discovering mysteries of the world.
- **Training** should be provided to **journalists** to raise their awareness about gender stereotypes, in particular in science.

- Brochures, books, TV-programmes and CDs – DVDs on women and science should be produced.
- Meetings and workshops between **journalists** and **scientists** should be organised to open the dialogue and raise the awareness about the need to promote gender equality in science.

- **Women scientists and women's associations**
- **Professional organisations** and **networks** of women in science should be established in the Enwise countries, including women scientists returning from abroad, and women brain-drainers. The **diaspora** of women scientists should be targeted too.
- These organisations and networks should **empower** women scientists and monitor the **follow-up of the Enwise report**.
- These organisations and networks should ensure **strategic co-operation** with EU-15 women scientists and women scientists from the Balkans.
- Strategic links between gender experts from **Eastern and Western Europe** should be developed.



Epilogue

Abundance or Shortage?

Gender and Scientific Excellence
in the Enwise countries

Nowadays it is not difficult to imagine that talents, capabilities, curiosity and enthusiasm related to scientific production are evenly distributed across gender and border lines, that each generation of young Europeans brings renewed capacity and passion for search and research in science, fresh commitments and desire to solve the puzzles of the mind and troubles of the world.

So, how is it possible, then, that the scientific excellence, the one recognised as such, is so scarce, elitist, heavily concentrated in certain locations, and so often represented by men? Or, to paraphrase Virginia Wolf and her idea of the tragic destiny of Shakespeare's imaginary sister, if a girl was to be born a genius in the Enwise countries today, would she have the opportunity to become some *Shakespeare in science*, or would she, like her genius mother, vanish or evaporate, becoming instead an average, highly-educated woman, tired of the double burden and slowly giving up her hopes and ambitions? Would she have any chance of being better than average, better than the *helper* of a male scientist if she decided to stay in her own country surrounded by her *non gender sensitive* fellow male and female colleagues, exhausting herself with daily survival, underpaid teaching or tiresome administration, being marginalised in team work or internal institutional *division of labour*? Would she be able to follow her own understanding of what is important in terms of research and knowledge and would she be able to build a community of scientists who share similar epistemology and understanding of the world? Would she be provided with adequate material and financial conditions and would she have a decent standard of living? Or rather, would she become a scientific nomad, *wandering like a ghost*¹ from one institution to another, from one country to another? Finally would she have to make a choice, and such a difficult one, to give up personal life and motherhood to become endlessly mobile, in order to become competitive in the international scientific market, which functions with vague and often unfair rules? Would she be caught up in a series of sequential decisions, in a vicious circle, losing in the end the very reason for making such a troublesome journey? Who will support her, who will congratulate her, who will admire her? If she succeeds in the male world of science, will the reward have the same flavour of success as if she had been a man?

"There is a long way to travel through many layers of prejudice in the scientific community until scientists of different backgrounds can participate in the common project of understanding the world... I hope to have reminded you of another significant effort in front of us, that of educating ourselves and our fellow scientists in the art of tolerance and cooperation."

Source: Natalija Micunovic, *Enwise workshop on Balkans, Brussels, 2003.*

"Westerners will always look with big suspicion to somebody who is coming from the East, it is a matter of fact..."

Source: Lithuanian scientist, in *Zvinklene, 2003.*

1. Expression used by Nikolina Sretenova, Bulgarian member of the Enwise Expert Group, to name Eastern brain-drainers in the West.

We do not know about the women who have considered all these dilemmas and decided to give up, who have become scientific *drop-outs*. We do not know how to measure the waste of women's talents or loss of women's excellence in the Enwise countries. But we know that this **waste is huge and detrimental**, not only to potential women scientists, **potentially excellent scientists**, but also for their countries, for Europe and for human kind. On a more practical level, we also know that the ERA goals cannot be fulfilled if potential women scientists, basing themselves on the negative experiences of the present day women scientists in terms of extraordinarily high efforts and extremely low rewards, make the only rational choice – to give up or to *brain-drain*. But, we, women scientists from the Enwise countries, know that change is possible, starting with a deeper understanding of the problem, which this Report is all about.

So in the end, is there shortage or abundance of women's scientific excellence in the Enwise countries? Shortage is societal and cultural construction, a negative consequence of multilayered exclusions. In terms of *excellence*, the semi-peripheral position of the Enwise countries and male-dominated scientific structures are the major constraints for the manifestation of women's *excellence*, preventing it from being visible and recognised. This is why the individual response of women is so often withdrawal and self-marginalisation. Lack of *excellence* measured by the existing numbers does not reflect lack of individual capacities, but societal constraints imposed by both gender and West-East hierarchies.

Women can only move forward if these hierarchies and exclusions connected with them gradually diminish. The same is true for men. The visibility and recognition of abundance, abundance of talents and of excellence, create in fact powerful *win-win* logic, rewarding for both women and men scientists in Europe, highly beneficial for the very project of the European Research Area.

"Coming back home after three years leave, my self-perception was as if I came back home from the military service, as if I had been soldier for 3 years. In England, in each moment of my stay I used to mobilise all of my energy and sense in order to respond to different expectations of my surroundings."

Source: Romanian young female scientist, Symposium on "Science Policy, Mobility and Brain Drain in the EU and candidate countries", Leeds, July 2003.

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Annex 1 Maps of Europe and the Enwise countries

Europe in 1908: Empires, kingdoms and republics



Europe in 1970: Western and Eastern Blocks



The Republic of Bulgaria / Republika Bălgarija (BG)

Area	110 993 km ²
Capital city	Sofia
Population	8 million inhabitants, of which the largest part is urban
Ethnic profile	Bulgarians (85.8%), Turks (9.7%), Roma (3.4%) others (1.1%)
Religion	Christian Orthodox (85%), Muslims (13%), others (2%)
Form of government	Parliamentary Republic
Currency	The Bulgarian Lev (Bulgarski Lev) 1 € = 1.95 Lev (BGL) ¹

The Czech Republic / Česká Republika (CZ)

Area	79 000 km ²
Capital city	Prague
Population	10.3 million inhabitants, two thirds of which live in towns and a third in the countryside
Ethnic profile	Czech (94%), Slovak (3%) - Poles, Germans, Roma and Hungarians for the remaining 3%
Religion	Christians (but nearly as many self-proclaimed atheists)
Form of government	Parliamentary Republic
Currency	The Czech Crown (Koruna Česká) 1 € = 32.67 Koruna (CZK) ¹

The Republic of Estonia / Eesti Vabariik (EE)

Area	45 227 km ²
Capital city	Tallinn
Population	1.36 million inhabitants, of which 67.4% urban population and 32.6% rural population
Ethnic profile	Estonians (67.9%), Russians (25.6%), Ukrainians (2.1%), Belarusians (1.2%), Finns (0.9%), others (2.3%)
Religion	Predominantly Lutherans - Orthodox
Form of government	Parliamentary Republic
Currency	The Estonian Crown (Eesti Kroon) 1 € = 15.65 Kroon (EEK) ¹

The Republic of Hungary / Magyar Köztársaság (HU)

Area	93 036 km ²
Capital city	Budapest
Population	10.2 million inhabitants, of which 63.7% urban population, 36.3% rural population
Ethnic profile	Hungarians (96.6%) - 13 officially recognised and registered minorities: Germans, Roma, Croats, Slovaks, Romanians, Bulgarians, Greeks, Poles, Armenians, Ruthenians, Serbs, Ukrainians
Religion	Roman Catholics (65%), Reformed (20%), Lutherans (4%), Orthodox (2.7%), Jews (1%)
Form of government	Parliamentary Republic
Currency	The Hungarian Forint (Magyar Forint) 1 € = 255 Forint (HUF) ¹

The Republic of Latvia / Latvijas Republika (LV)

Area	64 600 km ²
Capital city	Rīga
Population	2.3 million inhabitants, of which 69% urban population and 31% rural population
Ethnic profile	Latvians (58.2%), Russians (29.2%), others (Belarusians, Ukrainians, Poles, Lithuanians)
Religion	Lutherans, Roman Catholics, Russian Orthodox
Form of government	Parliamentary Republic
Currency	The Latvian Lats (Latvijas Lats) 1 € = 0.643 Lats (LVL) ¹

The Republic of Lithuania / Lietuvos Respublika (LT)

Area	65 301 km ²
Capital city	Vilnius
Population	3.5 million inhabitants of which 68% live in urban areas and 32% in rural areas
Ethnic profile	Lithuanians (83%), Russians (6.3%), Poles (6.7%), Belarusians (1.4%), Ukrainians (1%), Jews (0.1%), others (0.7%)
Religion	Roman Catholics (79%)
Form of government	Parliamentary Republic
Currency	The Lithuanian Litas (Lietuvos Litas) 1 € = 3.45 Litas (LTL) ¹

1. Financial Times - Sept. 15, 03

The Republic of Poland / Rzeczpospolita Polska (PL)

Area	312 685 km ²
Capital city	Warsaw
Population	38.654 million inhabitants
Ethnic profile	Poles (98%) - Poland recognises 13 national or ethnic minorities
Religion	Roman Catholics (95%), Eastern Orthodox, Protestants and others (5%)
Form of government	Parliamentary Republic
Currency	The Polish Zloty (Polski Złoty) 1€ = 4.446 Złoty (PLN) ¹

The Republic of Romania (RO)

Area	238 391 km ²
Capital city	Bucharest
Population	21.7 million inhabitants, of which 52.7% urban population, 47.3% rural population
Ethnic profile	Romanians (89.4%), Hungarians (6.6%), Roma (2.4%), Ukrainians (0.3%), Germans (0.3%), others (1%)
Religion	Orthodox (86.8%), Roman Catholics incl. Greek rite (6%), Protestants (6%), others (1.2%)
Form of government	Parliamentary Republic
Currency	The Romanian Leu (Leu Romanesc) 1€ = 38080.0 Leu (ROL) ¹

The Slovak Republic / Slovenská Republika (SK)

Area	49 035 km ²
Capital city	Bratislava
Population	5.4 million inhabitants, of which 56.9% urban; 43.7% rural
Ethnic profile	Slovaks (85.8%), Hungarians (9.7%), Roma (1.7%), Czechs (0.8%), Ruthenians (0.4%), Ukrainians (0.2%), Germans (0.1%), Poles (0.04%)
Religion	Roman Catholics (68.9%), Protestants (9.1%), Greek-Catholics (4.1%), Jews (0.04%), Atheists (13%), unknown (3%)
Form of government	Parliamentary Republic
Currency	The Slovak Crown (Slovenská Koruna) 1€ = 41.45 Koruna (SKK) ¹

1. Financial Times - Sept. 15, 03

Europe in 2003: at the eve of enlargement...



Annex 2

Gender Studies in the Enwise countries

■ Balkan Region and the former Yugoslavia

A list of gender studies, centres and courses in the Balkan region and the former Yugoslavia will be provided in Marina Blagojević (ed.) (2004). Enwise Workshop “Starting a debate with women scientists from the Balkan region” - Proceedings, forthcoming.

■ Bulgaria

□ Zentar za Sozialni Izsledvania na Pola

(Centre for Social Studies of Gender)

University of Sofia. Sofia.

Founded in 1999, the Centre is based at the Department of Philosophy. It offers MA and PhD degrees in interdisciplinary studies on women and gender in culture and society. The Centre includes 6 core members and 25 affiliated faculty members from departments across the university. It is supported by eminent international scholars. In 2003-2004, the Centre provided two full scholarships for women from the Roma Community, coming from Central and Eastern European countries, supported by the Roma Rights Centre in Budapest.

Contact person: Nedyalka Videva

E-mails:

gender_center@sclg.uni-sofia.bg

nelly@sclg.uni-sofia.bg

Web-site (in English):

www.uni-sofia.bg/resources/gsc/engl/home/index.html

■ The Czech Republic

□ Asociace pro rovné příležitosti

(Association for Equal Opportunities). Prague.

Established in 1998 as a civic association composed of women, this f the association is to support the implementation of equal opportunities for women and men and to promote their participation in political and public life. The association represents the whole spectrum of opinions and politics, from conservative to liberal.

Contact person: Michaela Tominová

E-mail: mtominová@hotmail.cz

□ Centrum pro studia rodu

(Centre for Gender Studies). Charles University. Prague.

The Centre was founded in 2002 as a unit to assist university academics and experts in gender studies, in order to meet the increasing demand for gender training and education coming from the state administration and other governmental bodies, as a result of the need to implement equal opportunity policies.

Contact person: Petr Pavlík

E-mail: petr.pavlik@hotmail.cz

Web-site: www.soc-prace.ff.cuni.cz/gender/

□ Gender Studies o.p.s.

(GSC - Gender Studies Centre). Prague.

The Centre was set up in 1991 by dissident women and functioned primarily as a library of mostly foreign language gender literature. It is now a civic association, which works unofficially as a platform for Czech women's NGOs and operates the largest library for gender studies in the Czech Republic.

Contact person: Michaela Tominová

E-mails:

gender@ecn.cz

redakce@feminismus.cz

Web-site: www.feminismus.cz

□ Gender Centrum

(Gender Centre). Masaryk University. Brno.

Established in 2000, this unofficial students' centre is based at the Faculty of Social Sciences and supported by the Open Society Fund in Prague. The Gender Centre is devoted to research, education and co-operation, and principally addresses Moravian NGOs and libraries. The Centre has developed a project for creating facilities for children whose parents study at and are employed by the Faculty of Social Sciences. The Centre has set up an undergraduate course in gender studies, which will begin in the academic year 2004-2005.

Contact person: Iva Šmídová

E-mail: krizala@fss.muni.cz

Web-site: www.gender.pisis.cz/

□ **Magisterský program genderových studií – Fakulta humanitních studií**

(Graduate Programme in Gender Studies – Faculty of Humanities)
Charles University. Prague.

The graduate programme is currently being considered for accreditation at Charles University. In 2003, a proposal for a MA programme on gender studies was promoted by the Faculty of Humanities, consisting of a two-year follow-up multidisciplinary graduate programme.

Contact person: Hana Havelková
E-mail: hana.havelkova@volny.cz

□ **Národní kontaktní centrum – ženy a věda**

(National Contact Centre – Women in Science). Prague.

Established in 2001 and financed by the Ministry of Education, Youth and Sport of the Czech Republic (MŠMT) within the ambit of the EUPRO activities. Its main objective is to improve the condition of women professionals in HE and R&D and to increase the proportion of women in executive positions. The Centre provides assistance to women in science (for instance legal advice on pay discrimination), runs a quarterly journal concerning gender and science and organises regular seminars and workshops on gender issues.

Contact person: Marcela Linková
E-mail: marcela@zenyaveda.cz
Web-site: www.zenyaveda.cz

□ **Odd. Gender a sociologie – sociologický ústav AV ČR**

(Gender and Sociology Research Department – Institute of Sociology).
Academy of Sciences of the Czech Republic. Prague.

The Gender and Sociology Department was established in the Institute of Sociology (SoÚ) of the Academy of Sciences (AV ČR) in 1991. It was the first in the country and started to develop institutionally gender sensitive science and research. Apart from research activities in national and international projects, women members of the department (about 10 researchers) teach at universities, co-operate with the media, collaborate as independent experts with ministries and NGOs, contribute to the promotion of equal opportunities policies for men and women and to the increase of gender mainstreaming in the ČR.

Contact person: Alena Krížková
E-mail: krizkova@soc.cas.cz

■ **Estonia**

□ **Eesti Naisuurimus ja Teabekeskus (ENUT)**

(Estonian Women's Studies and Resources Centre).
Pedagogical University. Tallinn.

ENUT is located at the Pedagogical University and is the only institution of this kind in Estonia. It is a non-governmental organisation and serves as a specialised library on women's and gender issues, collecting and disseminating information and raising gender awareness through seminars, conferences and publications.

Contact persons: Ilvi Jõe-Cannon, Birgit Soans
E-mail: birgit.soans@enut.ee
Web-site: www.enut.ee

■ **Germany – New Eastern Länder**

□ **Interdisziplinäres Zentrum für Frauen- und Geschlechterstudien (IZFG)**

(Interdisciplinary Centre for Women and Gender Studies).
Ernst-Moritz-Arndt-Universität Greifswald. Greifswald.

IZFG was founded in 1996 by the Faculty of Philosophy of the University of Greifswald and it is partly financed by the Women's Representative and Equal Opportunity Commissioner of the Federal State of Mecklenburg-Vorpommern. Its scientific and political goal is to provide equal opportunities for women in the academic field. The main activities of the Centre are the promotion and integration of interdisciplinary gender studies, advising applications of research projects, expanding the reference library and organising conferences.

Contact persons: Kerstin Knopf,
Sigrid Nieberle, Monika Schneikart
E-mail: izentrum@uni-greifswald.de
Web-site: www.uni-greifswald.de/%07Eizfg/

□ **Junge Frauen in Natur- und Ingenieurwissenschaften**

(Young Women in Natural Sciences and Engineering).
Sachsen-Anhalt Government. Halle.

This initiative is funded by the Government of Sachsen-Anhalt and the European Social Fund. Its goal is to promote the interests of female high school students in natural sciences and technology study programmes.

Contact persons: Christiane Rietz,
Gabriele Brauer
E-mails:
Cristiane.Riez@daa-bw.de
daa-thale@t-online.de
Web-site: www.frauenpraktikum.de

□ **Kompetenzzentrum *Frauen für Naturwissenschaft und Technik***

(Centre of Excellence “Women for Natural Sciences and Technology”).
Universities of Mecklenburg-Vorpommern/Fachhochschule Stralsund.
Stralsund.

The Centre was established in 2001 by the Higher Education Science Programme (HWP) with the objective of increasing the ratio of women in natural sciences and technology studies programmes. It is conceptually based on the gender mainstreaming approach, which was implemented by the Higher Education Law of Mecklenburg-Vorpommern. This Centre has been established in all five universities of Mecklenburg-Vorpommern and is led by one project assistant per location. Its main activities include providing general information for women on natural sciences and technology studies, organising open house days and developing gender awareness in HE personnel.

Contact person: Eva-Maria Mertens
E-mail: eva-maria.mertens@fh-stralsund.de
Web-site: www.kompetenzzentrum-mv.de/

□ **Koordinierungsstelle für Frauen- und Geschlechterforschung in Sachsen-Anhalt**

(Centre for the Co-ordination of Women and Gender Research in Sachsen-Anhalt). Universität Magdeburg. Magdeburg.

The Centre was founded in 2001 and mainly financed by the Higher Education Science Programme (HWP), in co-operation with the Federal Ministry of Education and Science and the Ministry of Education and Cultural Affairs of Sachsen-Anhalt. Its main activities include: co-ordinating research in women’s and gender studies in Sachsen-Anhalt; building and strengthening networks in women’s and gender studies; promoting the careers of young female academics.

Contact person: Katharina Bunzmann
E-mail: katharina.bunzmann@gse-w.uni-magdeburg.de
Web-site: www.uni-magdeburg.de/gleichstellung/sbuero/koord/start.htm

□ **Professur für Frauenforschung**

(Chair for Women’s Studies/Sociology of Gender Relations).
Universität Potsdam. Potsdam.

The chair, established in 1994, is based at the Faculty of Economics and Social Sciences and is designed to teach women’s studies in the field of sociology. It has to co-ordinate a network of scholars and researchers interested in gender issues at the Potsdam University. The key aim of the chair is to analyse how gender is embedded in economic, social, political, juridical and organisational forms.

Contact person: Irene Dölling
E-mail: doelling@rz.uni-potsdam.de
Web-site: www.uni-potsdam.de/u/frauenforschung/

□ **Thüringer Koordinierungsstelle *Naturwissenschaft und Technik für Schülerinnen, Studentinnen und Absolventinnen***

(Thüringen Coordinating Committee “Natural Sciences and Technology for Female High School Students, College Students and Graduates”).
Technische Universität Ilmenau. Ilmenau.

The Committee is funded by the European Social Fund, the Government of Thüringen and the Federal Department of Education and Research. Its goal is to promote the interest of young women in natural sciences and engineering study programmes. The Committee co-operates with all universities with applied sciences programmes. It provides information on natural sciences/technology studies and vocational prospects for female high school students, supports teachers and parents with respect to study decisions and develops mentoring networks for female high school students, college students, and graduates.

Contact person: Heike Mammen
E-mail: thueko@tu-ilmenau.de
Web-site: www.stud.tu-ilmenau.de/~thueko01/

□ **Zentrum für Frauen- und Geschlechterforschung (FraGes)**

(Centre for Women’s and Gender Studies). Universität Leipzig. Leipzig.

FraGes was founded in 2000 as a result of an initiative taken by employees and members of the University of Leipzig, who were concerned with the issue of gender studies. FraGes supports young scientists and is establishing contacts among researchers interested in gender issues at Leipzig University and other universities and institutions. It is anticipated that FraGes could formally become the centre for developing gender studies within the university.

Contact person: Dorothee Alfermann
E-mail: frages@rz.uni-leipzig.de
Web-site: www.uni-leipzig.de/%7Efrages/

□ **Zentrum für transdisziplinäre Geschlechterstudien (ZtG)**

(Centre for transdisciplinary Gender Studies).

Humboldt-Universität zu Berlin. Berlin.

The Centre, established in 2003, came about through the merging of the Centre for Interdisciplinary Women’s Studies (founded in 1989) and the Gender Studies Programme (started in 1997). The ZtG team, coming from more than 20 departments of various faculties, provides a wide range of services for faculties, students and researchers. Gender studies are offered at the graduate and undergraduate level as either major or minor courses.

Contact person: Gabriele Jähnert
E-mail: zentrum@gender.hu-berlin.de
Web-site: www.gender.hu-berlin.de

■ Hungary

□ Department of Gender Studies.

Central European University. Budapest.

The Department offers degree programmes in gender studies at MA and PhD level and serves as a basis for non-degree studies in various forms, as well as for different activities in the field. The programme promotes a variety of interrelated scholarly interests. With an important, but not exclusive, focus on Central and Eastern Europe, both the MA and the PhD programmes seek to contribute to the development of socially relevant knowledge based on these approaches and to critically question past and present developments related to gender in culture and society.

Contact person: Susan Zimmermann

E-mail: gender@ceu.hu

Web-site (in English): www.ceu.hu/gend/gendir.html

□ TÁRKI – Női Adattár

(*Social Research Informatics Centre – Hungarian Gender Databank*).

Ministry of Social and Family Affairs. Budapest.

The aim of the Centre is to disseminate the results of empirical research surveys and to provide access to databases connected with this field of study, as well as promoting the development of researchers' networks. The Hungarian Gender Databank is sponsored by the Ministry of Social and Family Affairs.

Contact person: Ildikó Nagy

E-mail: nagyildi@tarki.hu

Web-sites:

www.tarki.hu/adatbank-h/nok/index.html

www.tarki.hu/adatbank-h/nok/changerole/kutregiszter-e.html

□ Társadalmi Nem- és Kultúrakutató Központ

(*Gender and Cultural Studies Centre*).

Budapest University of Economic Sciences and Public Administration (BUESPA). Budapest.

The aim of the Centre is to co-ordinate and to develop gender related educational and research activities at BUESPA and to connect the university with other national and international scientific networks. The research and educational activities of the Centre, which is inter-institutional and inter-disciplinary, include both women and men in their focus.

Contact persons: Beáta Nagy, Miklós Hadas

E-mail: gender@bkae.hu

Web-site: www.gender.bkae.hu/

Other university departments involved in gender studies:

□ University Eötvös Loránd

Department of General Philosophy. Budapest.

Course: Difference of genders in the history of philosophy.

Contact person: Mária Joó

E-mail: joomaria@netscape.net

Web-site: www.btk.elte.hu

□ University of Miskolc

Department of Philosophy. Miskolc.

Contact persons: Judit Hell, Andrea Pető

E-mails:

bolhellj@uni-miskolc.hu

petoand@axelero.hu

□ University of Szeged

Institute of English and American Studies. Szeged.

Courses: Feminist theory and philosophy; an introduction to gender studies; gender in intellectual history.

Contact persons: Reszné Marinovich Sarolta

E-mails:

ieas@lit.u-szeged.hu

resch@lit.u-szeged.hu

Web-site: www.arts.u-szeged.hu/ieas/

■ Latvia

□ Feministica Lettica

University of Latvia. Rīga.

The Centre for feminist studies and gender research was established in 1998 as a cross-disciplinary research unit, based at the Department for Baltic Studies of the University of Latvia. The aim of the Centre is to deal not only with issues related to academic research, but to go beyond academic boundaries, creating a dialogue among women coming from various social and professional environments. In 1999, the Centre began to edit an annual publication, entitled *Feministica Lettica*.

Contact person: Ausma Cimdina

E-mail: lettica@latnet.lv

Web-site: www.lu.lv/jauna/strukt/feministica_lettica.html

□ LU Dzimtes Studiju Centrs

(*Centre for Gender Studies*). University of Latvia. Rīga.

The Centre, established in 1998, is a study and research centre, which undertakes studies on gender theories, with particular interest in issues such as: gender and power, religion, culture, history, politics and philosophy. The Centre is aimed at developing interdisciplinary studies and research programmes in order to collect and analyse different social sciences and humanities from the perspective of gender studies. The Centre provides information about gender studies, feminism, conferences and workshops in Latvia, as well as abroad and has a library specialising in gender studies in Latvia and abroad. The Gender Studies Centre cooperates with other university centres for gender studies and participates in different projects.

Contact person: Elizabete Pičukāne

E-mail: dzsc@lanet.lv

Web-site: www.lu.lv/jauna/strukt/c_dzimtes.html

■ Lithuania

□ Lyčių studijų centras

(Gender Studies Centre). Vilnius University. Vilnius.

This Centre was known as the Women's Studies Centre, when it was founded in 1992, until it was given a new name in 2002.

Contact person: Lijana Stundziene

E-mail: msc@cr.vu.lt

Web-site: www.moterys.lt

□ Lyčių studijų centras

(Gender Studies Centre). University of Technology. Kaunas.

This Centre was founded in 1993.

Contact person: Aiste Urboniene

E-mail: aiste.urboniene@ktu.lt

Web-site: www.ktu.lt

□ Moterų informacijos centras

(Women's Issues Information Centre). Vilnius.

This Centre was founded in 1996.

Contact person: Egle Kucinskaite

E-mail: wiic@undp.lt

□ Moterų studijų centras

(Women's Studies Centre). Klaipeda University. Klaipeda.

The Centre was established in 1997.

Contact person: Elena Vitkiene

E-mail: rekkat@gmf.ku.lt

Web-site: www.ku.lt

□ Moters Studijų centras

(Women's Studies Centre). Siauliai University. Siauliai.

This Centre was founded in 1998.

Contact person: Svetlana Karavajeva

E-mail: lanasvet@delfi.lt

Web-site: www.su.lt

■ Poland

□ Instytut Filozofii i Socjologii PAN.

Pracownia Badań nad Kobietami

(Women's Studies Centre).

Academy of Sciences - Institute of Philosophy and Sociology. Warsaw.

This Centre was established in 1994.

Contact person: Anna Titkow

E-mail: atitkow@ifispan.waw.pl

□ Interdyscyplinarne Studia Podyplomowe z Zakresu Gender

(Post-Graduate Interdisciplinary Gender Studies).

Jagiellonian University - Institute of Audiovisual Arts. Kraków.

The Centre offers interdisciplinary courses for post-graduate students (MA and PhD candidates). Its main goals include the introduction of gender studies within the Polish academic environment, the popularisation of gender oriented research as a part of contemporary humanities; the promotion of an interdisciplinary approach to gender studies; the practical analysis of particular gender issues.

Contact person: Małgorzata Radkiewicz

E-mail: radkiewi@theta.uoks.uj.edu.pl

□ Interdyscyplinarny Zespół Badań nad Problematyką Gender.

(Interdisciplinary Research Group on Gender Studies).

University of Silesia - Department of Philology. Katowice.

E-mail: gender@us.edu.pl

Web-site (in English): www.zenskestudie.edu.yu/wgsact/poland/pl-irgg.html#ProgramDescription

□ Interdyscyplinarny Zespół Badań nad Problematyką Gender

(Interdisciplinary Group on Gender Studies). University of Wrocław – Institute of English Philology. Wrocław.

This is an interdepartmental interdisciplinary group, the aim of which is to establish an international network of academics (with a particular interest in young scientists), non-profit practitioners and teachers who collaborate across disciplinary, professional and national boundaries to foster a culture of pluralism, diversity and participative democracy in order to promote civil society in Central and Eastern Europe.

Contact persons:

Hana Cervinkova, Agnieszka Zembrzuska, Edyta Zierkiewicz

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ytda@o2.pl

Web-site (in English): www.iisce.dswe.wroc.pl

□ Interdyscyplinarny Zespół Badawczy Problemów Kobiet UAM

(Women's Studies Interdisciplinary Research Group).

University of Adam Mickiewicz - Institute of Philosophy. Poznań.

The Centre has existed since 1989 as an informal group of scholars and students sharing interests in gender studies within different fields of academic endeavour. In the coming years, the research group will run MA and PhD seminars oriented towards thesis research.

Contact person: Elżbieta Pakszys

E-mail: pakszyse@main.amu.edu.pl

Web-site: www.main.amu.edu.pl/~pakszyse/welcome.html

□ Interdyscyplinarny Zespół do Badań nad Społecznymi Problemami Płci Instytutu Studiów Społecznych Uniwersytetu Warszawskiego

(Interdisciplinary Research Section on Gender).

University of Warsaw - Institute of Social Studies. Warsaw.

The Research Section, established in 1993, organises seminars on women in the labour market, politics, media and culture for students of sociology and other disciplines. It develops projects at national and international levels. It is connected to the UNESCO Chair "Women, Society and Development", established in 1996.

Contact person: Renata Siemińska

E-mails:

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Web-site: www.iss.uw.edu.pl/ekipa.html#izbspp

□ **Ośrodek Naukowo - Badawczy Problematyki Kobiet, Uniwersytet Łódzki**

(*Women's Studies Centre*).
Łódź University. Łódź.

The Centre was established in 1992 and was the first structure of this kind in Poland. It is one of the oldest women's studies centres in Eastern and Central Europe. Its activities include research on and teaching of women's issues from different disciplinary points of view (cultural anthropology, philosophy, sociology, psychology, literature, film and cultural studies) as well as the organisation of international conferences, seminars and workshops, hosting guest lectures and publishing conference materials. These activities are addressed to the university community and the general public. The Women's Studies Centre co-operates with scholars and institutions from more than forty universities from the European Union, the United States and Australia with in various international research and teaching projects. Moreover, the Centre co-operates on a regular basis with local artists and professional journalists.

Contact persons: Elżbieta H. Oleksy, Małgorzata Dziedziczak-Papis, Aleksandra M. Różalska
E-mail: gender2002@uni.lodz.pl
Web-site (in English): www.uni.lodz.pl/womenstudies

□ **Studium Podyplomowe Gender Studies. Interdyscyplinarne Studia nad Społeczną i Kulturową Tożsamością Płci**

(*Post-Graduate Gender Studies*).

Warsaw University – Institute of Applied Social Sciences. Warsaw.

The Centre was founded in 1995 and post-graduate gender studies began in 1996. The aim of these studies is to define gender, identify its function in culture, society and social sciences, and, finally, to understand the social consequences of gender-related norms and stereotypes. The two year degree prepares employees for family courts, legal offices, counselling centres, media and women's organisations.

Contact persons: Małgorzata Fuszara, Bożena Choluż
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Web-site: www.gender.uw.edu.pl

■ **Romania**

□ **Asociația Română a Femeilor cu Diploma Universitară**

(*Romanian Association of University Women*). Bucharest.

The organisation is affiliated to the "International Federation of University Women" (IFUW) composed of 74 organisations around the globe. It offers programmes, information and advocacy, in accordance with the priorities of IFUW. It focuses in particular on graduate women and provides a wide range of educational, humanitarian and cultural activities.

Contact person: Maria A. Ciochirca
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□ **Centrul de Studii Feministe și de Gen – Departamentul de Sociologie și Asistența Socială**

(*Centre for Feminist and Gender Studies – Department of Sociology and Social Work*). University Alexandru Ioan Cuza. Iași.

The Centre aims at developing interdisciplinary research in the field of feminism; a graduate programme - MA degree in women's studies; interdisciplinary research activity concerning women in post-communist societies; links with women's organisations in Romania and abroad; exchange of information and mobility of teaching staff with women's studies centres in Europe and world wide; information and documentation sources; publication activities.

Contact person: Doina Balahur
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Web-site (in English): www.uaic.ro

□ **Centrul Român pentru Femeile din Știință și Tehnologie (Romanian Gender Centre for Women in Science and Technology).**

Bucharest.

The main scope of the Centre is to improve Romanian women's education and professional careers by promoting: a wider access to education and professional training for women; the dissemination of information regarding training and career opportunities; a wider involvement in science and technology activities; the encouragement of the promotion of women in managerial and decision-making positions; the involvement and development of research and technology programmes and projects with significant impact on women's work, particularly in rural communities and less developed areas; and a better access to information concerning the activities of gender organisations in Romania and abroad.

Contact person: Alexandra Caramizoiu
E-mail: alexandra_caramizoiu@pcnet.ro

□ **Fundația Sanse Egale pentru Femei (SEF)**

(*Foundation for Equal Opportunities for Women*). Iași.

The aim of the Foundation is to increase women's participation in decision making, in politics and public life; to promote women's participation in community development; to foster solidarity among women involved in both democracy building/consolidation and political life; to defend both women's human rights and interests by evaluating policies and the development of social. These aims are to be implemented at local, national, regional and international levels.

Contact person: Dina Loghin
E-mail: sef@sef.ro
Web-site (in English): www.sef.ro

□ **Gender – Centru de Studiu al Identitatii Feminine**

(*Gender – Centre for Feminine Identity Studies*). Bucharest.

Contact person: Madalina Nicolaescu

E-mail: mnicolaescu@fx.ro

□ **Grupul Interdisciplinar de Studii de Gen**

(*Interdisciplinary Group for Gender Studies*).

Babes-Bolyai University, Cluj-Napoca.

The group is developing - within the Faculty of Cultural Anthropology - regional research and teaching activities with a strong gender and ethnic component.

Contact person: Eniko Magyari-Vincze

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□ **Institutul Femeilor**

(*Women's Institute*). Bucharest.

Contact person: Craciun Proica

E-mail: prody@pcnet.pcnnet.ro

□ **Societatea de Analize Feministe (AnA)**

(*Romanian Society for Feminist Analyses*). Bucharest.

Established in 1993, it was the first feminist centre in contemporary Romania and was one of two Romanian organisations, which won in 1998 the US/EU Award for Civil Society and Democracy. It serves as a link between academics, women activists and NGOs in Romania. As a multimedia resource centre, its main activities are focused around four departments: a documentation centre, a library, a teaching unit and a printing department. Since 1995, AnA publishes the only journal for feminist studies in Romania (*AnaLize Journal*); is involved in community development programmes; designs and launches practical oriented research projects in all fields related to gender issues. The teaching unit provides advice on curricula design for gender/feminist university courses and trains gender experts.

Contact person: Laura Grunberg

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ana_saf@anasaf.ro

L.Grunberg@cepes.ro

Web-site (in English): www.anasaf.ro

■ **The Slovak Republic**

□ **Centrum rodových štúdií**

(*Gender Studies Centre*).

Comenius University – Faculty of Arts, Bratislava.

Founded in 2001, the Centre is the first institution established in the Slovak Republic, which focuses on educational and research activities on gender. The interdisciplinary programme is concentrated on relations between genders in different areas of life and theory and collaborates with scholars from various departments. Its aim is to approximate university education and research to the standards of the countries, where gender studies have been developed as an expression of the democratic policy of education.

Contact person: Zuzana Kicková

E-mail: genderstudies@fphil.uniba.sk

Web-site (in English): www.genderstudies.fphil.uniba.sk

■ **Slovenia**

In Slovenia, there is no special centre for women's studies because a gender mainstreaming approach prevailed until the end of the 1990s. Gender/women's studies are mostly concentrated in the following academic institutions:

□ **Fakulteta za družbene vede**

(*Faculty of Social Sciences*).

University of Ljubljana, Ljubljana.

Contact persons:

Maca Jogan, Mirjana Ule, Tanja Rener, Nevenka Sadar-Černigoj

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Nevenka.Sadar@uni-lj.si

Web-site: www.fdv.uni-lj.si/osebne/Jogan.HTM

□ **Filozofska fakulteta**

(*Faculty of Philosophy*).

University of Ljubljana, Ljubljana.

Department of Sociology

Contact person: Milica Antič-Gaber

E-mail: Milica.Antic@ff.uni-lj.si

Web-site (in English): www.ff.uni-lj.si/sociologija/english.htm

Postgraduate programme *Women's Studies and Feminist Theory*

Contact person: Eva Bahovec

E-mail: Eva.Bahovec@guest.arnes.si

Web-site (in English): www.ff.uni-lj.si/filo/english/staff/bahoveca.htm

□ **Fakulteta za socialno delo**

(*Faculty of Social Work*).

University of Ljubljana, Ljubljana.

Contact person: Darja Zaviršek

E-mail: Darja.Zavirsek@guest.arnes.si

Web-site: www.vssd.uni-lj.si/SODELAVCI/ZAVIRSEK.HTML

□ **Institutum Studiorum Humanitatis (ISH)**

(*Institute for Studies of Humanities*). Ljubljana.

Contact person: Svetlana Slapsak

E-mail: svetlana@ish.si

Web-site: www.ish.si

□ **Pedagoška fakulteta**

(*Faculty of Pedagogic*).

University of Maribor, Maribor.

Contact person: Jana Bezenšek

E-mail: Jana.Bezensek@uni-mb.si

Web-site: www.pfmb.uni-mb.si/programi/soc/uvod.html

□ **Urad za enake možnosti**

(*Office for Equal Opportunities*).

Government of the Republic of Slovenia, Ljubljana.

Contact person: Tanja Salecl

E-mail: uem@gov.si

Web-site (in English): www.uem-rs.si/eng

Annex 3

Hierarchical structure of scientific degrees system & academic titles/ranks within HE and R&D

This Annex gives an insight in the hierarchical structure of Scientific Degrees & Titles Systems of the Enwise countries following the approach to the issue presented in the Commission's recent publication "*She Figures 2003*" (European Commission, 2003b). The reasons for approaching the issue in generalised and not in differentiated terms are as follows. Firstly, since the specific terminology of the academic titles/ranks differs across the Enwise countries, detailed descriptions would not facilitate the understanding of the issue, just the opposite. Facing the same difficulties, the "*She Figures 2003*" has articulated terminology¹ such as *academic staff grades* and differentiated between *Grade A* (corresponding to *Full Professor*) and the categories of *Grades B, C and D*. The last group has not been differentiated, because further methodological work is necessary if more detailed analysis is to be undertaken. Secondly, in order to obtain an insight in the hierarchy of the Enwise countries' system, three academic and research levels are presented hereafter. For example, in each Enwise country, the first rank/title "Researcher" is divided into several sub-categories (titles/ranks), but the respective countries' particularities are intentionally left out. In short, proceeding this way, the details are lost but a kind of common picture, as well as an insight into the system's hierarchy is gained. No other way for proceeding would be possible without preliminary specialised study on the issue or without preliminary elaborated methodology for such specialised study (which is of course outside the scope of this Report).

Following the Soviet model the majority of the Enwise countries (with the exceptions of Slovenia and Romania) introduced two-level scientific degrees. The first one was *Candidate of Science* (CSc.) similar to the Western academic degree PhD. Usually it was a three-year study at a post-graduate level resulting in defense of written doctoral thesis. The second scientific degree was *Doctor of Science* (DSc.) similar to the Western *Doctor Habilitatus*. It required the defense of second doctoral thesis and was of course more complicated. Post-graduate studies were held both at the National Academies of Sciences and at the Universities as well. The preliminary requirement for career-building at the University track (HE) as well as at the Scientific track (R&D) was the holding of *Candidate of Science* (PhD) degree.

The **University track** (HE sector): The hierarchical structure of titles/ranks (bottom to top) was: Lecturer, Assistant Professor, Associate Professor (in some Enwise countries known as Docent) and Full Professor. The highest academic title/rank was Academician, i.e. a Member of the National Academy of Sciences. At the **University track**, **Habilitation** meant and still means a process of applying with follow-up awarding of the title/rank *Associate Professor* and/or *Full Professor*.

1. For further details, see also Annex 8.

The **Scientific track** (Government R&D sector): The hierarchical structure of titles/ranks (bottom to top) was: *Researcher*, *Senior Researcher corresponding to the title Associate Professor* at the University track and *Senior Researcher corresponding to the title Full Professor* at the University track. At the **Scientific track**, **Habilitation** meant and still means a process of applying with follow-up awarding of title *Senior Researcher corresponding to Associate Professor* and/or a title *Senior Researcher corresponding to Full Professor*. The described hierarchical structure of scientific degrees and titles/ranks slightly vary across the Enwise countries, but mostly in terms of used specific terminology rather than in terms of structure.

Transformation of these degrees (1990-1995) and onwards

The former scientific degree *Candidate of Science* (CSc) was equalised to the Western academic degree of a PhD. The second scientific degree *Doctor of Science* (DSc.) was equalised to the Western degree *Doctor Habilitatus*. This was the case in Poland, whereas in Hungary, it was replaced by the scientific degree *Doctor of the Hungarian Academy of Sciences*. Bulgaria, the Czech Republic and the Slovak Republic preserved the scientific degree *Doctor of Science* (DSc.). In the Baltic States, the second scientific degree “*Doctor of Science*” (DSc.) was replaced by *Doctor Habilitatus* and universities were given back their right to award the academic degree of PhD.

Nevertheless heated debates are going on from time to time among the scientific communities on the issue of this latter DSc. Degree, and whether it has to be maintained or abolished?

Since 2000, the second level scientific degree, *Doctor of Science*, which was replaced in 1994 by *Doctor Habilitatus* has not been awarded any more in Estonia or Latvia. The previous Soviet two-level scientific degree system has been transformed into a one-tier academic degree in these countries. Unlike Estonia and Latvia, Lithuania preserved the second level scientific degree *Doctor Habilitatus*, but Lithuanian holders of this degree, as well as the holders of the first level scientific degree *Doctor of Science* passed through a specific process known as **nostrification** of their theses. “*It meant that all doctoral theses that have been defended during the communist period were checked by the Lithuanian Scientific Council for their scientific quality and for their loyalty to Lithuanian state. Some theses in social sciences and humanities, in particular in the field of the so-called scientific communism were not nostrified and their authors did not receive new diplomas (certificates) for Doctor of Science and/or Doctor Habilitatus*” (Zvinkliene, 2003).

The particular case of GDR

A two-level scientific degree also operated in GDR. The first scientific degree was *Doctor of an academic branch* (*Doktor eines Wissenschaftszweiges*) similar to the Western academic degree PhD and the second scientific degree - *Doktor Habilitatus* (Dr.Habil.). The latter was replaced in 1968 by *Doctor of Science* - DSc. (*Doktor der Wissenschaften*). After German unification, the holders of DSc. degree were offered official ways to change again back to Dr.Habil., since the scientific degree Dr.Habil. had always existed in Germany.

The typical structure of **University track** in GDR was: scientific assistant with limited contract (for graduates), scientific staff member with unlimited contracts (PhD as a rule), docent and professor (with DSc./Habilitation); and for the governmental **R&D sector**: scientific staff member with unlimited contracts (with PhD as a rule) and professor (DSc.).

Annex 4 R&D transformations in the Baltic States

In **Estonia** the law on *Research Organisation* was replaced by the new *Organisation of Research and Development Act* (adopted in 1997), which founded the basis for the structural reform of the research establishments, in particular for revising the mechanisms of financing of research institutions. The Estonian Science Foundation (ESF) and the Innovation Foundation (now part of the Enterprise Estonia Agency, EAS) were reorganised into independent non-profit agencies distributing the state budget allocation in the form of grants. Currently, the ESF distributes about 25% of the research funding via grants and the other 75% are distributed by the Ministry of Education and Research via its advisory body – the Science Competence Council. The process of integration of the research institutes formerly belonging to the Estonian Academy of Sciences into the four Estonian Universities was carried out in 1996-1998.

Latvia has reorganised the financing system of science and research in a similar way. The former research institutes of the Latvian Academy of Sciences, being now independent governmental non-profit research organisations, do not receive the science funding **directly** (as in previous times) from the state budget, but the funding is delivered as research grants via Latvian Council of Science (LCS) and on the basis of a competition. The process of the integration of independent state research institutions into the Latvian universities, which had begun in 1995, was finished formally in 1998. It meant the incorporation of the state research institutes into Latvian universities with the aim of modernising the universities and of strengthening their research capacity. However, the integration of state research institutes into universities was in a sense a very formal process. Up to now, all the institutes are still legally independent, although they are formally university institutes. A new phase of transformation of the R&D sector is supposed to start in 2004. The legal status of the state research institutes will be changed, there will be only 5 to 7 state research institutes, most of them will be fully integrated into universities, and may be a few of them will be reformed as state commercial establishments.

In **Lithuania**, the main part of R&D capacity is concentrated in Higher Education and in the Governmental Sector as state research institutes and university research institutes. The HE and GOV R&D is financed from the budget; however, additional income can be funded by various foundations; for instance, Lithuanian State Research and Higher Education Fund gives the possibility for an individual scholar or a group of scholars to apply for a grant to support research, to prepare a scientific monograph, etc.

The research potential has remained unchanged during the last five years at least, where the Gross Domestic Expenditure on R&D (GERD) has been about 0.52% of the Gross Domestic Product (GDP). Growth of the capital expenditure in HE and Government R&D is insufficient, personnel costs are close to 80% of all expenditure despite the increase of business expenditure on R&D in 2000 and 2001.

On 1 October 2002, a new version of the Law on Research and Higher Education entered into force. The policy of research is shaped and implemented by the Ministry of Education and Science, in collaboration with the Science Council of Lithuania.

In order to improve the co-ordination of Lithuanian R&D activities and to increase efficiency of the country's R&D system, the Government established the Council on Science and Technologies in 2002. The Council is composed of R&D related ministers, outstanding researchers and representatives of industry. The Council is chaired by the Prime Minister.

At the end of the reorganisation, many of the sectoral institutes of the former Lithuanian Academy of Sciences, which, after the abolishment in 1991 of the Academy of Science as an independent scientific system, became governmental institutions, saved their independence from universities as state research institutes. The status of a university research institute is similar to that of a state research institute. University research institutes are more oriented towards fundamental research and act in research branches related to the teaching programmes of the corresponding university. The university appoints one third of the members of the board of a university research institute. State research establishments are under the supervision of corresponding ministries or universities. Ministerial institutes concentrate their activities on applied research and/or development.

Annex 5

HE legislation in the Enwise countries

(Transitional period and reforms in view of Enlargement)

Country	Legislation	Year
Bulgaria	- Law of (Autonomy) Higher Education (adopted in 1991)	1990
	- Law of Higher Education (amending a Law of 1990)	1995
Czech Republic	- Higher Education Act	1992
	- Higher Education Act	1997
Estonia	- Universities Act	1995
Hungary	- The New Higher Education Law	1993
Latvia	- Law on Scientific Activity	1992
	- Law on Higher Education Establishments (amended in 2000)	1995
	- Law on Education	1998
	- Law on Professional Education	1999
Lithuania	- Law on Research and Higher Education	1991
	- Law on Higher Education	2000
	- Law on Research and Higher Education	2002
Poland	- Act on Schools of Higher Education	1990
Romania	- Law of Accreditation of Higher Education Institutions and Recognition of Diplomas	1993
	- Law on Education with further modifications and supplements	1995
	- Statute of Teaching Staff	1997
	- Law concerning Private Higher Education	2002
	- Law concerning Romanian University Extensions abroad	2002
Slovak Republic	- Education Act	1990
	- Higher Education Act	1990
	- Act on State Administration and Self-Government	1992
	- Of which a new version	1996
Slovenia	- The Higher Education Act	1993
	- Amended	1999

The information given in the above table should be further commented:

- Because of the deficiencies of a bottom-up driven phase, the *Higher Education Acts* adopted in most Enwise countries during the first phase (1990-1995) were duly revised after 1995.
- The legislative reform in the CEECs and in the Baltic countries had **different priorities** during the transitional period as a whole. While most of the CEECs until 1995 focused their efforts on reforming their HE legislation, the Baltic States had another priority: the adoption of new R&D legislation. As stressed in the analysis of R&D sectors in the CEECs presented in Chapter 2, Slovenia was maybe the only one, which during this first phase focused its attention on promoting R&D legislation as well.
- During the *top-down* driven phase (1995-1998/9), the CEECs, in parallel to the amendment of their HE legislation, initiated legislative reforms in R&D sector as well. The Baltic countries, following the revision of the adopted R&D legislation during the first phase, initiated reforms of their HE sectors from 1995 onwards.

Annex 6

Distribution of researchers from the Enwise countries across R&D sectors, head count and percentage, 2001

		Business Enterprise		Higher Education		Government		Private Non-profit		All Sectors	
Bulgaria	Women	605	12.6 %	875	18.2 %	3 301	68.8 %	16	0.3 %	4 797	100.0 %
	Men	620	10.8 %	1 613	28.2 %	3 462	60.4 %	35	0.6 %	5 730	100.0 %
	Total	1 225	11.6 %	2 488	23.6 %	6 763	64.2 %	51	0.5 %	10 527	100.0 %
Czech Republic	Women	1 341	18.8 %	3 504	49.1 %	2 234	31.3 %	54	0.8 %	7 133	100.0 %
	Men	6 777	34.9 %	7 580	39.0 %	4 853	25.0 %	229	1.2 %	19 439	100.0 %
	Total	8 118	30.6 %	11 084	41.7 %	7 087	26.7 %	283	1.1 %	26 572	100.0 %
Estonia	Women	164	8.3 %	1 434	72.8 %	349	17.7 %	22	1.1 %	1 969	100.0 %
	Men	343	13.2 %	1 913	73.5 %	326	12.5 %	19	0.7 %	2 601	100.0 %
	Total	507	11.1 %	3 347	73.2 %	675	14.8 %	41	0.9 %	4 570	100.0 %
Hungary	Women	1 208	12.9 %	6 313	67.4 %	1 842	19.7 %	:	:	9 363	100.0 %
	Men	3 700	19.5 %	11 958	63.0 %	3 330	17.5 %	:	:	18 988	100.0 %
	Total	4 908	17.3 %	18 271	64.4 %	5 172	18.2 %	:	:	28 351	100.0 %
Latvia	Women	518	17.3 %	2 059	68.6 %	419	14.0 %	4	0.1 %	3 000	100.0 %
	Men	405	14.7 %	1 974	71.5 %	381	13.8 %	1	0.0 %	2 761	100.0 %
	Total	923	16.0 %	4 033	70.0 %	800	13.9 %	5	0.1 %	5 761	100.0 %
Lithuania	Women	248	5.2 %	3 439	71.5 %	1 114	23.2 %	10	0.2 %	4 811	100.0 %
	Men	343	6.3 %	3 800	70.0 %	1 269	23.4 %	14	0.3 %	5 426	100.0 %
	Total	591	5.8 %	7 239	70.7 %	2 383	23.3 %	24	0.2 %	10 237	100.0 %
Poland	Women	3 332	9.9 %	24 925	74.3 %	5 307	15.8 %	:	:	33 564	100.0 %
	Men	8 464	15.5 %	39 072	71.6 %	7 054	12.9 %	:	:	54 590	100.0 %
	Total	11 796	13.4 %	63 997	72.6 %	12 361	14.0 %	:	:	88 154	100.0 %
Romania	Women	4 835	47.4 %	2 470	24.4 %	2 802	27.7 %	:	:	10 107	100.0 %
	Men	6 821	50.6 %	3 707	27.5 %	2 962	22.0 %	:	:	13 490	100.0 %
	Total	11 656	49.4 %	6 177	26.2 %	5 764	24.4 %	:	:	23 597	100.0 %
Slovak Republic ⁽¹⁾	Women	644	16.9 %	2 089	54.7 %	1 083	28.4 %	:	:	3 816	100.0 %
	Men	1 612	28.0 %	2 801	48.6 %	1 355	23.5 %	:	:	5 768	100.0 %
	Total	2 256	23.5 %	4 890	51.0 %	2 438	25.4 %	:	:	9 584	100.0 %
Slovenia	Women	471	20.0 %	1 007	42.7 %	862	36.6 %	18	0.8 %	2 358	100.0 %
	Men	1 114	26.5 %	1 947	46.3 %	1 057	25.1 %	86	2.0 %	4 204	100.0 %
	Total	1 585	24.2 %	2 954	45.0 %	1 919	29.2 %	104	1.6 %	6 562	100.0 %
Enwise-10	Women	13 366	16.5 %	48 115	59.5 %	19 313	23.9 %	124	0.2 %	80 918	100.0 %
	Men	30 199	22.7 %	76 365	57.4 %	26 049	19.6 %	384	0.3 %	132 997	100.0 %
	Total	43 565	20.4 %	124 480	58.2 %	45 362	21.2 %	508	0.2 %	213 915	100.0 %
EU-15 ⁽²⁾	Women	51 952 ⁽³⁾	17.5 %	200 981	67.9 %	43 268	14.6 %	:	:	296 201 ⁽⁴⁾	100.0 %
	Men	294 194 ⁽³⁾	37.2 %	399 142	50.5 %	96 742	12.2 %	:	:	790 078 ⁽⁴⁾	100.0 %
	Total	346 146 ⁽³⁾	31.9 %	600 123	55.2 %	140 010	12.9 %	:	:	1 086 279 ⁽⁴⁾	100.0 %

Source: European Commission 2003b.

Exceptions to the reference year: BG, EE, LV (HES+GOV), PL, SI: 2000

Notes: (1) FTE as exception to HC

(2) Reference year: 2000 (exception: AT: 1998)

(3) Excludes BE, NL, LU, SE, UK because no sex-disaggregated data for the BES are available from these countries
This amounts to an additional 150 000 researchers, representing about 30% of the BES

(4) PNP not included in calculation

Annex 7

Gender distribution of researchers from the Enwise countries within each country and R&D sectors, head count and percentage, 2001

		Business Enterprise		Higher Education		Government		Private Non-profit		All Sectors	
Bulgaria	Women	605	49 %	875	35 %	3 301	49 %	16	31 %	4 797	46 %
	Men	620	51 %	1 613	65 %	3 462	51 %	35	69 %	5 730	54 %
	Total	1 225	100 %	2 488	100 %	6 763	100 %	51	100 %	10 527	100 %
Czech Republic	Women	1 341	17 %	3 504	32 %	2 234	32 %	54	19 %	7 133	27 %
	Men	6 777	83 %	7 580	68 %	4 853	68 %	229	81 %	19 439	73 %
	Total	8 118	100 %	11 084	100 %	7 087	100 %	283	100 %	26 572	100 %
Estonia	Women	164	32 %	1 434	43 %	349	52 %	22	54 %	1 969	43 %
	Men	343	68 %	1 913	57 %	326	48 %	19	46 %	2 601	57 %
	Total	507	100 %	3 347	100 %	675	100 %	41	100 %	4 570	100 %
Hungary	Women	1 208	25 %	6 313	35 %	1 842	36 %	:	:	9 363	33 %
	Men	3 700	75 %	11 958	65 %	3 330	64 %	:	:	18 988	66 %
	Total	4 908	100 %	18 271	100 %	5 172	100 %	:	:	28 351	100 %
Latvia	Women	518	56 %	2 059	51 %	419	53 %	4	80 %	3 000	52 %
	Men	405	44 %	1 974	49 %	381	47 %	1	20 %	2 761	48 %
	Total	923	100 %	4 033	100 %	800	100 %	5	100 %	5 761	100 %
Lithuania	Women	248	42 %	3 439	48 %	1 114	47 %	10	42 %	4 811	47 %
	Men	343	58 %	3 800	52 %	1 269	53 %	14	58 %	5 426	53 %
	Total	591	100 %	7 239	100 %	2 383	100 %	24	100 %	10 237	100 %
Poland	Women	3 332	28 %	24 925	39 %	5 307	43 %	:	:	33 564	38 %
	Men	8 464	72 %	39 072	61 %	7 054	57 %	:	:	54 590	62 %
	Total	11 796	100 %	63 997	100 %	12 361	100 %	:	:	88 154	100 %
Romania	Women	4 835	41 %	2 470	40 %	2 802	49 %	:	:	10 107	43 %
	Men	6 821	59 %	3 707	60 %	2 962	51 %	:	:	13 490	57 %
	Total	11 656	100 %	6 177	100 %	5 764	100 %	:	:	23 597	100 %
Slovak Republic ⁽¹⁾	Women	644	29 %	2 089	43 %	1 083	44 %	:	:	3 816	40 %
	Men	1 612	71 %	2 801	57 %	1 355	56 %	:	:	5 768	60 %
	Total	2 256	100 %	4 890	100 %	2 438	100 %	:	:	9 584	100 %
Slovenia	Women	471	30 %	1 007	34 %	862	45 %	18	17 %	2 358	36 %
	Men	1 114	70 %	1 947	66 %	1 057	56 %	86	83	4 204	64 %
	Total	1 585	100 %	2 954	100 %	1 919	100 %	104	100	6 562	100 %
Enwise-10	Women	13 366	31 %	48 115	39 %	19 313	43 %	124	24	80 918	38 %
	Men	30 199	69 %	76 365	61 %	26 049	57 %	384	76	132 997	62 %
	Total	43 565	100 %	124 480	100 %	45 362	100 %	508	100	213 915	100 %
EU-15 ⁽²⁾	Women	51 952 ⁽³⁾	15 %	200 981	33 %	43 268	31 %	:	:	296 201 ⁽⁴⁾	27 %
	Men	294 194 ⁽³⁾	85 %	399 142	67 %	96 742	69 %	:	:	790 078 ⁽⁴⁾	73 %
	Total	346 146 ⁽³⁾	100 %	600 123	100 %	140 010	100 %	:	:	1 086 279 ⁽⁴⁾	100 %

Source: European Commission 2003b.

Exceptions to the reference year: BG, EE, LV (HES+GOV), PL, SI: 2000

Notes: (1) FTE as exception to HC

(2) Reference year: 2000 (exception: AT: 1998)

(3) Excludes BE, NL, LU, SE, UK because no sex-disaggregated data for the BES are available from these countries
This amounts to an additional 150 000 researchers, representing about 30% of the BES

(4) PNP not included in calculation

Annex 8

National Academic Staff Grades in the Enwise countries

The following lists the academic staff grades, to which reference is made in Chapter 3. The grade(s) corresponding to Grade A and to the sum of Grades B, C and D are presented below, under each country heading.

Bulgaria

A: Professor

B-D: Associate Professor, Assistant Lecturer, Research associate.

Czech Republic

A: Professor

B-D: Associate Professor, Senior Assistant, Assistant Lecturer.

Estonia¹

A: Professor

B-D: Associate Professor, Assistant Professor, Assistant Teacher, Other.

Hungary

A: Professor (Egyetemi Tanár)

B-D: Associate Professor (Docens), Senior Lecturer (Adjunktus), Lecturer (Tanársegéd).

Latvia

A: Full Professor

B-D: Associate Professor, Assistant Professor, Assistant Lecturer, Researcher.

Lithuania

A: Professor

B-D: Associate Professor, Other teaching staff.

Poland

A: Full Professor

B-D: Doctor, Doctor hab., Professor of high school.

Romania

No data.

Slovak Republic

A: Professor

B-D: Docent, Senior Lecturer, Lector, Lecturer.

Slovenia

A: Professor

B-D: Associate Professor, Assistant Professor.

(1) The data on academic staff cover universities and research centres within universities (most research institutes have been incorporated into universities). These data are represented in FTE and include both educational and R&D activities.

Annex 9

Female Representation in the National Academies of Sciences of the Enwise Countries

Country	Distribution	Board of Directors	Executive Council	General Assembly
Bulgaria	Total	11	12	59
	Females	0	3	1
	% of Females	0 %	25 %	2 %
Czech Republic	Total	7	10	246
	Females	2	0	30
	% of Females	29 %	0 %	12 %
Estonia	Total	12	8	57
	Females	1	0	1
	% of Females	8 %	0 %	2 %
Hungary	Total	20	6	337
	Females	0	0	11
	% of Females	0 %	0 %	3 %
Latvia	Total	6	28	97
	Females	0	5	12
	% of Females	0 %	18 %	12 %
Lithuania	Total	7	<i>Not Applicable</i>	40
	Females	1	<i>Not Applicable</i>	1
	% of Females	14 %	<i>Not Applicable</i>	3 %
Poland	Total	4	32	191
	Females	0	1	4
	% of Females	0 %	3 %	2 %
Romania	Total	6	17	181
	Female	1	1	<i>Data Unavailable</i>
	% of Females	17 %	6 %	<i>Data Unavailable</i>
Slovak Republic	Total	15	10	84
	Females	2	3	19
	% of Females	13 %	30 %	23 %
Slovenia	Total	13	<i>Not Applicable</i>	73
	Females	2	<i>Not Applicable</i>	2
	% of Females	15 %	<i>Not Applicable</i>	3 %
ENWISE-10*	Total	101	123	1 365
	Females	9	13	81
	% of Females	9 %	11 %	6 %

Source: from the various members of the Enwise Expert Group.

Note: * Totals for Executive Councils for Enwise-8 without Lithuania and Slovenia
Totals for General Assembly for Enwise-9, without Romania

The model of Academies of Sciences that has been inherited from the Soviet period has two layers. For example, in 2002, among 97 full members of the Latvian Academy of Sciences, which was reorganised as an association of recognised scientists, only 12 were women and, among 28 fellows of the Senate of this organisation, only 5 were female scientists. In Lithuania, in 1995, a woman was elected, for the first time, chairperson of a science division in agriculture and forestry at the Presidium of Lithuanian Academy of Sciences; later, in 1998, she was elected academician in agronomy and she was the only female representative.

For the second layer, there are currently only four women Directors of State research institutes out of a total of 33 in Latvia. The same situation can be found in the Czech Republic: in 2000, out of 2 400 members of the scientific staff of the Academy, 1000 were women, but only 118 (one third) were in leading positions.

Another example can be taken out of the survey promoted in 2002 by the Slovak Academy of Sciences (Sedová, 2003). It was a pilot project with the scope of monitoring the situation, qualification and position of women researchers. Sex-disaggregated data were also collected in order to point out the presence or under-deputation of women scientists in leading positions, committees and decisional bodies. The main result of the analysis was that, even though women were 32.7% of the personnel working in the Slovak Academy of Sciences, there was nevertheless a vertical distribution into two different categories. This showed a consistent divergence: at the top-level, women were 15.6%, while, at the second and lower one, they were 42.1%.

Annex 10

Helsinki Group on Women and Science. Members from the Enwise countries

Country	Name	Title	Department	Organisation	E-mail
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Annex 11

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Abbreviations

AG – Advisory Group (FP6 denomination)	ERA-MORE – European Research Area - MOBILE REsearchers
A&HCI – Arts and Humanities Citation Index	ESF – Estonian Science Foundation
AS – Academy of Sciences	ETAN – European Technology Assessment Network
AT – Austria	EU – European Union
BA – Bachelor of Arts	EURATOM – European Community Framework Programme for Research and Training in the Field of Nuclear Energy
BAS – Bulgarian Academy of Sciences	EUROSTAT – Statistical Office of the European Communities
BE – Belgium	EXSIS – EXperts Sub-Information System (FP5 expert database)
BES – Business Enterprise Sector (in R&D)	FP – European Community Framework Programme for Research and Technological Development
BG – Bulgaria	FP5 – The 5th European Community Framework Programme for Research and Technological Development (1998 – 2002)
CC – Candidate Country	FP6 – The 6th European Community Framework Programme for Research and Technological Development (2002 – 2006)
CEDAW – Convention on the Elimination of All Forms of Discrimination against Women	FRG – Federal Republic of Germany (1949 – 1990)
CEECs – Central and Eastern European Countries	FRY – Federal Republic of Yugoslavia (1945 – 1991)
CERN – European Organisation for Nuclear Research	FTE – Full-time equivalent
CNRS – French National Centre for Scientific Research	FYRoM – Former Yugoslav Republic of Macedonia
Comecon – Council for Mutual Economic Assistance	GDP – Gross Domestic Product
CORDIS – Community Research and Development Information Service	GDR – German Democratic Republic (1949 – 1990)
COST – European Cooperation in the field of Scientific and Technical Research	GERD – Gross Expenditure on R&D
CREST – Scientific and Technical Research Committee	GOV – Government Sector (in R&D)
C.Sc. – Candidate of Sciences	GROWTH – Competitive and Sustainable Growth (FP5 Thematic Programme)
CZ – The Czech Republic	HAS – Hungarian Academy of Sciences
DE – Germany	HC – Head Count
DG – Directorate-General (of the European Commission)	HCSO – Hungarian Central Statistical Office
D.Sc. – Doctor of Sciences	HE – Higher Education
EAG – External Advisory Group (FP5 denomination)	HEGPR – Higher Education Gender Progression Ratio
EAS – Enterprise Estonia Agency	HEP – Programme for the Renewal of Higher Education and Research in the New <i>Länder</i> (Germany)
EC – European Commission	HES – Higher Education Sector (in R&D)
ECTS – European Credit Transfer System	HU – Hungary
EE – Estonia	IHP – Improving Human Research Potential and the Socio-economic Knowledge Base (FP5 Horizontal Programme)
EESD – Energy, Environment and Sustainable Development (FP5 Thematic Programme)	IMF – International Monetary Fund
EMM – Expert Management Module (FP6 expert database)	
Enwise – ENlarge <i>Women In Science</i> to East	
Enwise countries: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia	
ERA – European Research Area	

INCO – Confirming the International Role of the Community Research (FP5 Horizontal Programme)

Innovation/SMEs – Promotion of Innovation and Encouragement of Participation of SMEs (FP5 Horizontal Programme)

ISCED – International Standard Classification of Education

IST – User-friendly Information Society (FP5 Thematic Programme)

IT – Information Technologies

ITRE – European Parliament Committee on Industry, External Trade, Research and Energy

JINR – Joint Institute for Nuclear Research

LAS – Latvian Academy of Sciences

LCS – Latvian Council of Science

LT – Lithuania

LU – Luxembourg

LV – Latvia

MA – Master of Arts

MCF – Marie Curie Fellowship

MEP(s) – Member(s) of the European Parliament

MES – Ministry of Education and Science

MP – Member of the Parliament

MÜFA – Technological Development Fund (Hungary)

M.Sc. – Master of Science

NACE – General industrial classification of economic activities within the EC

NAS – National Academy of Sciences

NCP – National Contact Point

NEAA – National Evaluation and Accreditation Agency

NGO – Non-Governmental Organisation

NKC – *Ženy a Věda*: the Czech National Contact Centre – Women and Science

NKFP – National Technological Development Fund (Hungary)

NL – The Netherlands

NSI – National Statistical Institute

OECD – Organisation of Economic Co-operation and Development

OTKA – Hungarian Scientific Research Fund

PA – Pennsylvania

PAN – Polish Academy of Sciences

PHARE – Poland and Hungary Action for Restructuring of the Economy (extended to all other CEECs)

PhD – Doctor of Philosophy

PNP – Private Non-Profit Sector (of R&D)

PL – Poland

QoL – Quality of Life and Management of Living Resources (FP5 Thematic Programme)

RAS – Romanian Academy of Sciences

R&D – Research and Development

RO – Romania

RSEs - Researchers

RTD – Research and Technological Development

RTF – Rich Text Format

SCI – Science Citation Index

SE – Sweden

SEECs – Southern Eastern European Countries

SI – Slovenia

SMEs – Small and Medium Enterprises

SK – The Slovak Republic

SSCI – Social Sciences Citation Index

S&T – Science and Technology

TEMPUS – Trans-European Mobility Scheme for University Studies

UK – United Kingdom

UN – United Nations

UNDP – United Nations Development Programme

UNECE – UN Economic Commission for Europe

UNESCO – United Nations Educational, Scientific and Cultural Organisation

USA – United States of America

USSR – Union of the Soviet Socialist Republics

VEGA – Scientific Grant Agency of the Ministry of Education of the Slovak Republic and the Slovak Academy of Sciences

W&S – Women and Science

WIP – Scientist Integration Programme (Germany)

WWI – World War I (1914 – 1918)

WWII – World War II (1939 – 1945)

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DG Research on Europa

- Homepage: http://europa.eu.int/comm/research/index_en.cfm
- Research frequently asked questions: <http://europa.eu.int/comm/research/faq/>
- Science and Society: <http://europa.eu.int/comm/research/science-society/>
- Women and Science:
http://europa.eu.int/comm/research/science-society/women-science/women-science_en.html
- Enwise: http://europa.eu.int/comm/research/science-society/women/enwise/index_en.html
- European Platform of women scientists:
http://europa.eu.int/comm/research/science-society/women-science/network_en.html
- Statistics and indicators:
http://europa.eu.int/comm/research/science-society/women/wssi/index_en.html
- Women and Science - National reports on the situation of women in science in Europe:
http://europa.eu.int/comm/research/science-society/women-science/helsinki03_en.html
- Women and Science publications and background documents:
http://europa.eu.int/comm/research/science-society/documents_en.html

DG Research on Cordis

- Frequently asked questions: <http://www.cordis.lu/helpdesk/faqs.htm>
- FP6 homepage: <http://fp6.cordis.lu/fp6/home.cfm>
- FP6 at a glance: http://www.cordis.lu/fp6/fp6_glance.htm
- To register in EMM database: http://www.cordis.lu/experts/fp6_candidature.htm
- To find a FP6 call: <http://fp6.cordis.lu/fp6/calls.cfm>
- Science and Society: <http://www.cordis.lu/science-society/home.html>
- Gender in Research - FP5 and FP6 series: <http://www.cordis.lu/science-society/library.htm>
- Candidate countries: http://www.cordis.lu/national_service/en/candidate_countries.htm

Electronic sources of general interest

- Karat - Regional Coalition of Women's NGOs:
http://www.karat.org/about_us/member_organizations.html
- International Helsinki Federation for Human Rights (2002): <http://www.ihf/hr.org/reports/women/>
- Inter-Parliamentary Union of Women in Politics: <http://www.ipu.org/wmm-e/classif.htm>
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¹ Former State Minister of Research in 2002.

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Ene Ergma graduated in 1969 from Moscow University (cum laude) as an astronomer. In 1972, Professor Ergma defended her thesis for the candidate of mathematical-physical sciences (the equivalent of a PhD) and in 1984 the thesis for the doctor of mathematical-physical sciences (Dr. Sc.). From 1972 until 1988, she worked in the Astronomical Council as a junior researcher, then as the executive secretary, as a senior and subsequently as the leading researcher. The main topics of her research are stellar evolution and the physics of stars, unstable nuclear burning and the evolution of exotic binary systems with neutron stars and black holes. In 1988, Professor Ergma became the professor of astrophysics at Tartu University, in 1997, a member of the Estonian Academy of Sciences and, since 1999, she is one of the vice-presidents of the Estonian Academy of Sciences. Finally, Professor Ergma has been elected a Speaker of the Estonian Parliament in March 2003.



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Dóra Groó has been the Director of the Hungarian Science and Technology Foundation since its founding in 1994. A medical doctor by profession, she has worked in pharmaceutical research for 10 years and has received her PhD in experimental medicine. Dr Groó has published several papers in international scientific journals in this field. Since 1991 she has been the programme manager of the U.S. - Hungarian Science and Technology Joint Fund. Under her leadership, the Foundation has significantly extended its activity, from a two-member small office to a multi-functional organisation, working in several fields of Hungary's international RTD relations. Her work has benefited from her management studies, which resulted in an MBA degree in 2002. In 2002, she was appointed by EC - DG RTD to serve as a Project Technical Assistant for the FP5 Quality of Life thematic programme. The Foundation led by her was selected to serve as one of the bridgehead organisations of the European mobility network for researchers (ERAMORE).



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The *Enwise* report on the situation facing women scientists in the Central and Eastern European countries and the Baltic States shows that women account for 38% of the scientific workforce in these countries. However this statistic conceals some bitter truths: a large proportion of female scientists are employed in areas where R&D expenditure is lowest. Inadequate resources and poor infrastructure impede the progress of a whole generation of promising scientists. Men are three times more likely to reach senior academic positions than women. In this rather gloomy picture, there is nevertheless a positive sign: women scientists from the *Enwise* countries participate significantly in the European Union's Framework Programme. The report puts forward recommendations to the various stakeholders at European and national level, who can help to enhance the role and place of women scientists from the *Enwise* countries in the European Research Area.

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