



Women and Science in the EU

Perceptions from the East

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Outline

- 1. Promoting gender equality in science in the EU**
- 2. Key cause for concern**
- 3. Women and Science in Romania**



1. Promoting gender equality in science in the EU

Promoting equality of women and men in science – essential condition for building the strong ERA.

- **Treaty of Amsterdam (1997)**: equal opportunities between women and men / one of the European's Union objectives.
- **Women and science - Mobilising women to enrich European Research (Feb. 1999)**: the severe under-representation of women in science - action plan to promote gender equality in science.

What is the position of women in science?

How can ...

...institutions that employ and promote scientists open up more to women?

...fairness be assured in funding and assessing research?

...women have a more active role in shaping science and scientific policy?

...stereotypes be challenged?

...sex-disaggregated statistics and equality indicators be developed?

➡ **research *by, for and about* women!**



- European Technology Assessment Network (ETAN) on Women and Science (Nov. 1999)

EC Report *- Promoting excellence through mainstreaming gender equality* (2000)

Members of the ETAN Working Group on Women and Science present their report to Philippe Busquin, Commissioner for Research.
Photo: European Commission Audiovisual Library



- Helsinki Group on Women and Science (2000)

Mandate:

- to promote discussion and exchange of experiences on measures and policies devised and implemented at local, regional and European level
- to provide sex-disaggregated statistics and develop gender sensitive indicators.

➔ **national reports on the situation of women scientists**

Results:

- not very favourable situation of women in scientific research
- a lack of gender balance in decision making about science policy
- considerably diversity among countries (MS vs. As.S).



• ENWISE Expert Group - Enlarge the Women and Science Initiative to East (2002)

Mandate: to examine the situation in the Central and Eastern European countries and the Baltic states.

Results: Report (Sept. 2004): "Waste of talents: Turning private struggles into a public issue – Women and Science in the ENWISE countries"



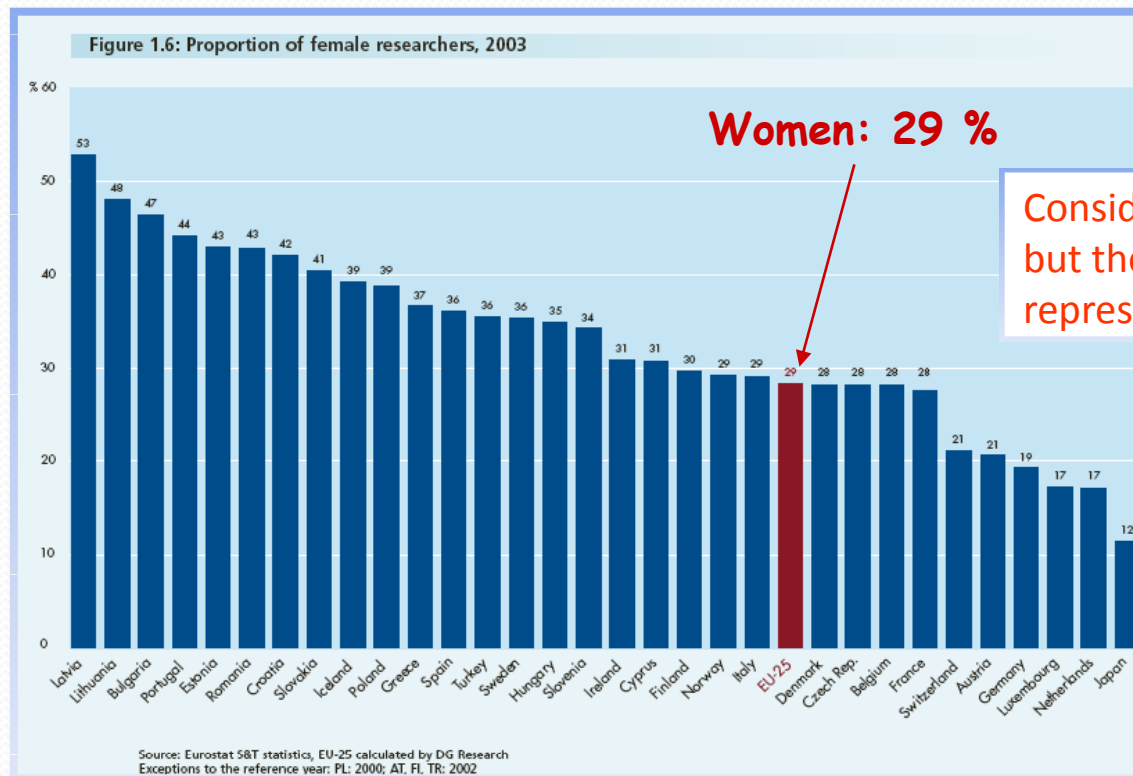
Higher proportions of women among researchers in the ENWISE countries than there are among the Member States.

- Influence of the specific gender policy implemented in these countries during the communist regime.
- The transition period has led to the restructuring of the research systems and can generally be characterized by the sharp decline in funding allocated to science and the decrease of the research population.

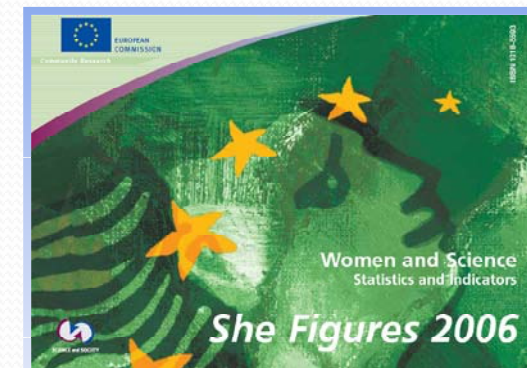


2. Key cause for concern

Women are under-represented in science / research



Considerable variation between countries, but there is a clear pattern of female under-representation!

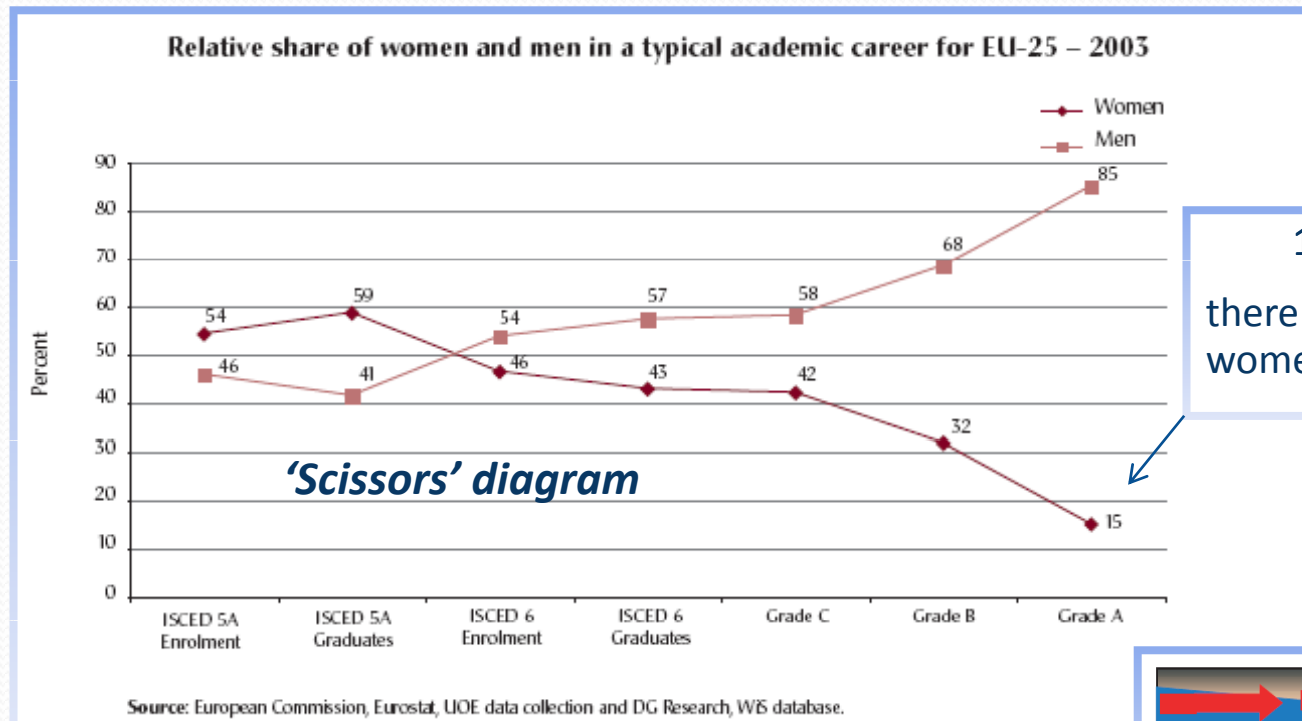




A waste of talent and motivation:

,leaky pipeline' phenomenon

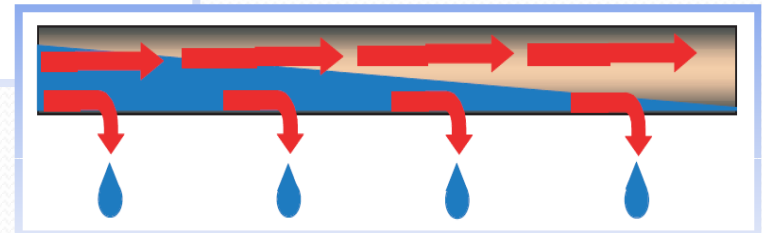
Women are lost from the academic pipeline at a greater rate than their male counterparts.

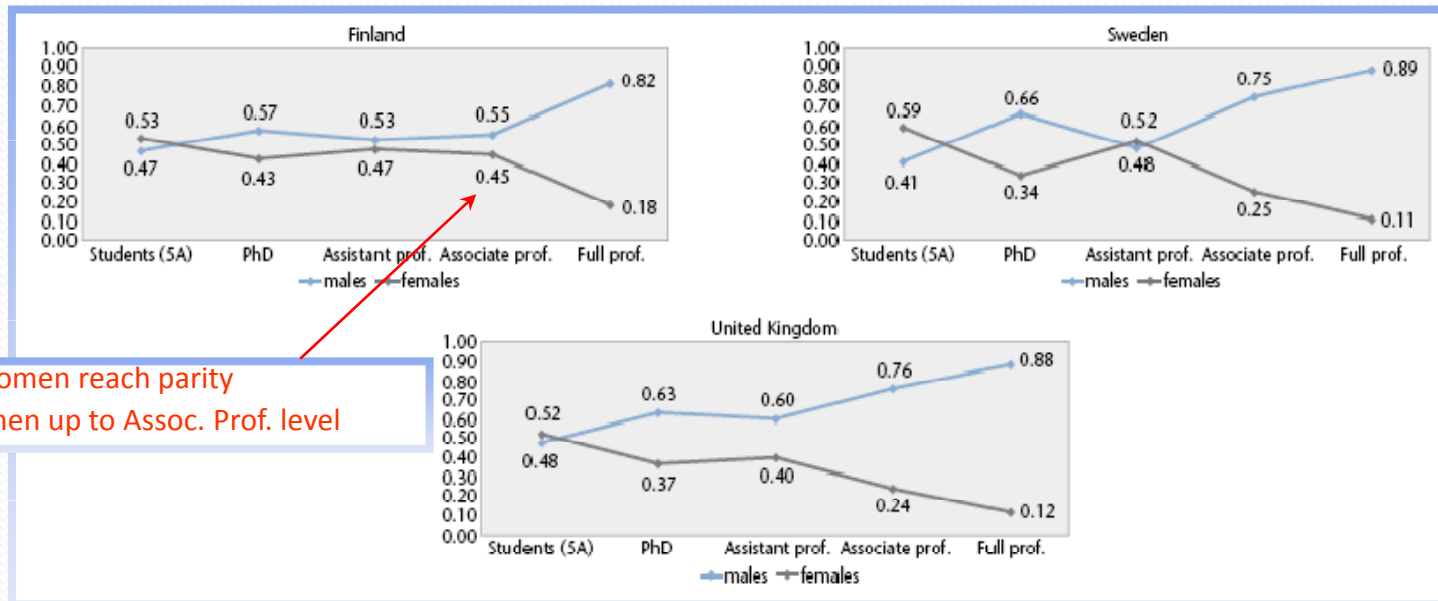


15 % !

there is a little room at the top for women in science!

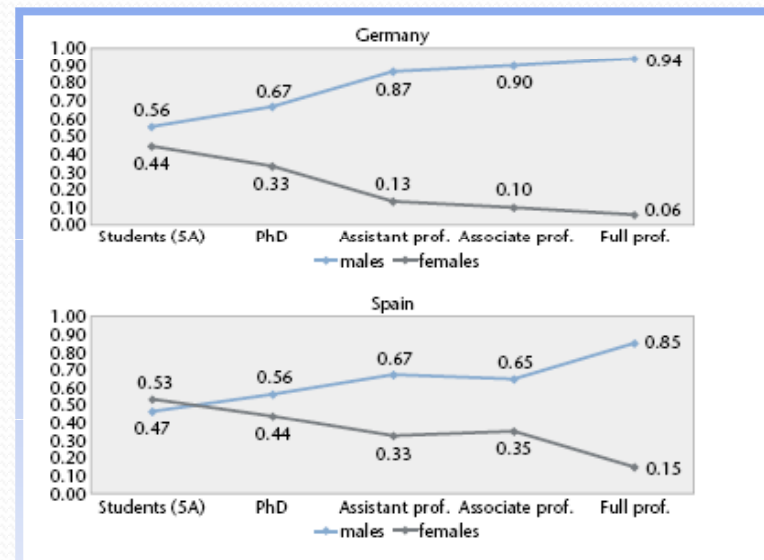
Women are the majority of students but men comprise the vast majority of senior post holders.





The women reach parity with men up to Assoc. Prof. level

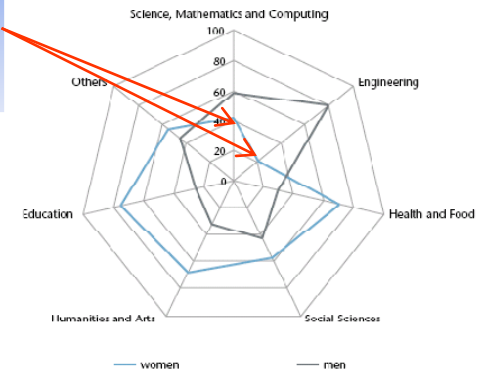
... variations by country





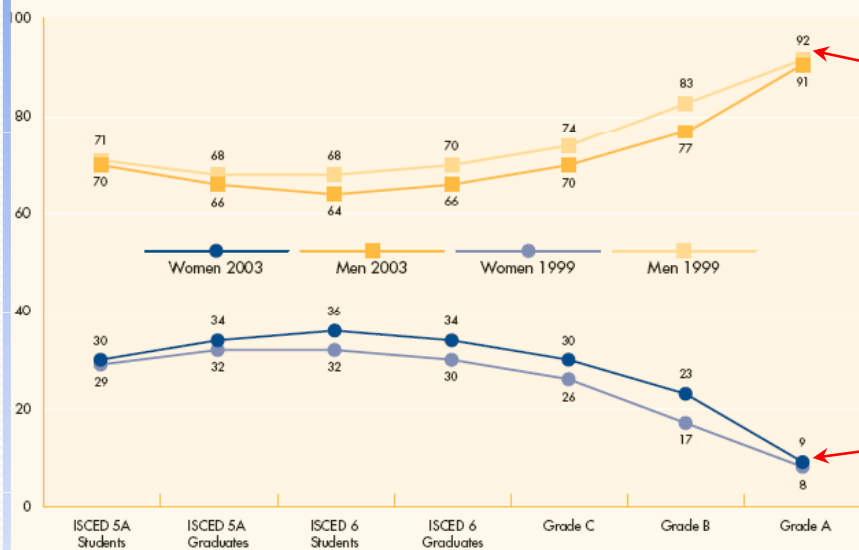
Women are under-represented in science and engineering

Shares (%) of male and female of graduates by field of study 2000, EU averages



... variations by discipline

Figure 3.2: Proportions of men and women in a typical academic career in science and engineering, students and academic staff, EU-25, 1999 and 2003



Definition of grades:

- A: The single highest grade/post in which research is normally conducted
- B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders
- C: The first grade/post into which a newly qualified PhD (ISCED6) graduate would normally be recruited

- ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements
- ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD)

Source: DG Research
Data: Eurostat/OECD

Note: No data were available for EL or P, which are therefore not included in the EU averages.

Third European Report on S&T Indicators, 2003

Men: 91 %

Women: 9 % !!

Extreme gender gap in science and engineering at the more senior academic levels



Why there are so few women in scientific research? Why so many drop out?

- women's lack of self-confidence
- lack of information on Science careers
- lack of career opportunities for women
- lack of role models
- a gender pay gap
- barriers at entry level - barriers to recruitment
- gender stereotypes.



Positive action measures (Helsinki Group)

The gender gap/differences are so persistent that they will not self-correct in the foreseeable future.



Policy intervention is essential!

Measures

- networks
- quotas and targets
- role models and mentoring
- research funds and prizes
- gender mainstreaming measures / tools (legislation, gender studies, sex-disaggregated statistics, modernizing human resources management, work/life balance measures....)

Policy points

Need for

- systematic, harmonised data on women in science.
- in-depth studies on processes that lead to gender imbalances.
- more research to understand the 'leaky pipeline' phenomenon.



3. Women and Science in Romania

Romania joined the European Union on January 1st, **2007**, along with Bulgaria. Together they take the number of EU members to 27.



Romania ~ 22 mil. inhabitants

- 51.2 % female population

- 48.8 % male population

The 45 years of communist regime in Romania were removed in December 1989.

Like other ex-communist countries, Romania crossed various difficult stages specific to transition economies, and that affected also the scientific research.

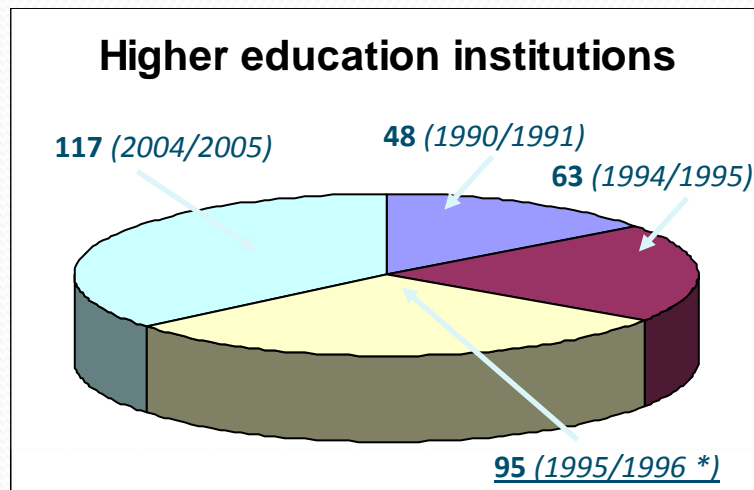


... some national statistics (Romania)

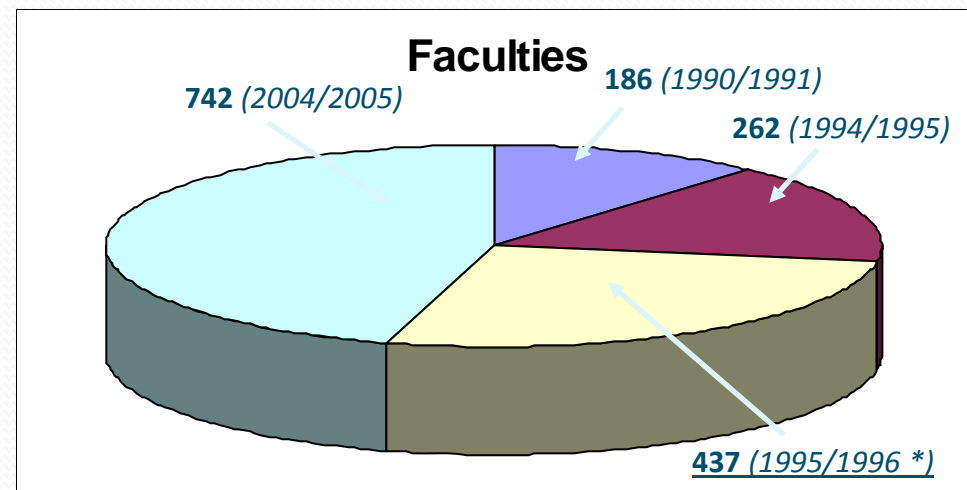
(Source: National Institute of Statistics, Bucharest, <http://www.insse.ro>)

■ Tertiary education institutions

Besides the state high education system, numerous private universities have been created and developed.



2005 vs. 1991 → 2.4 times more



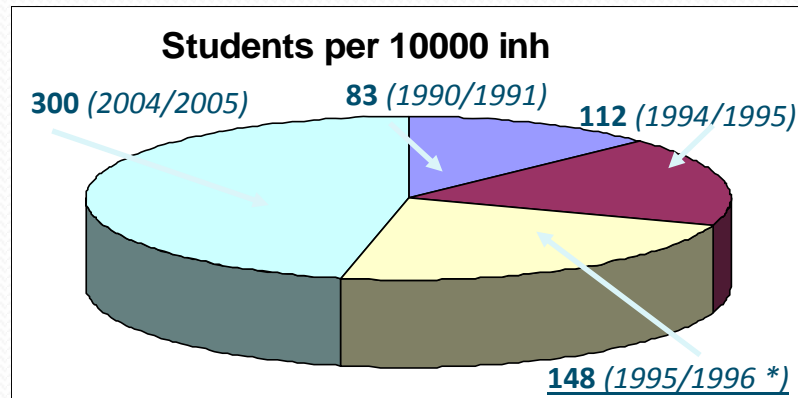
2005 vs. 1991 → 4 times more

Increased number of students and academic staff

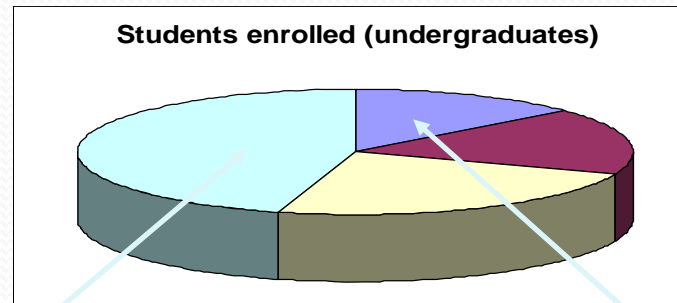
*Since 1995/96 academic year, statistical data also include higher education from private institutions



■ Students



2005 vs. 1991 → 3.6 times more



650,333 (2004/2005)
of which **54.9 % female students**

192,810 (1990/1991)
of which **47.2% female students**

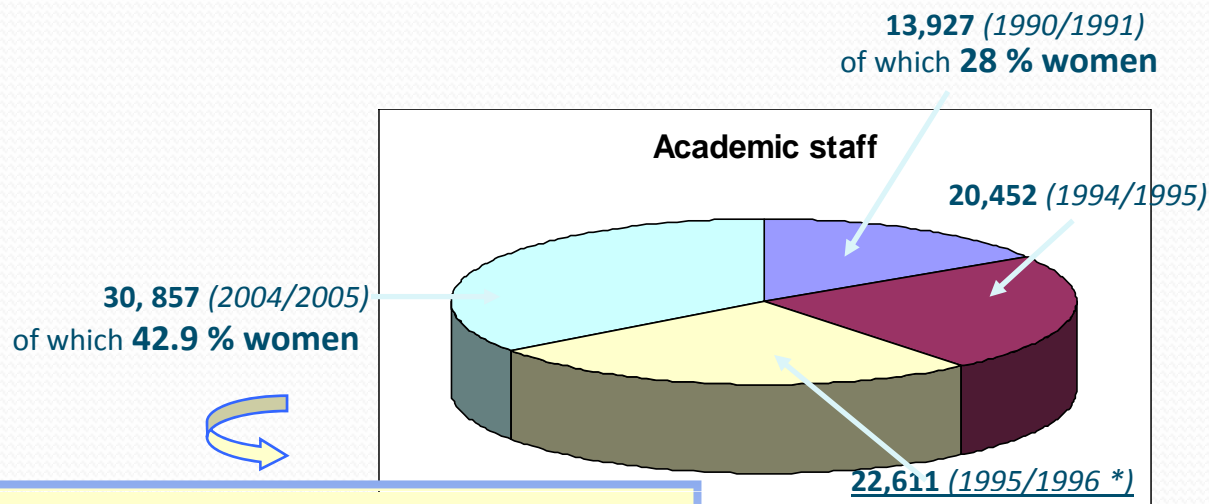


2005 vs. 1991 → 3.4 times more (total)

3.9 times more female students



■ Academic staff



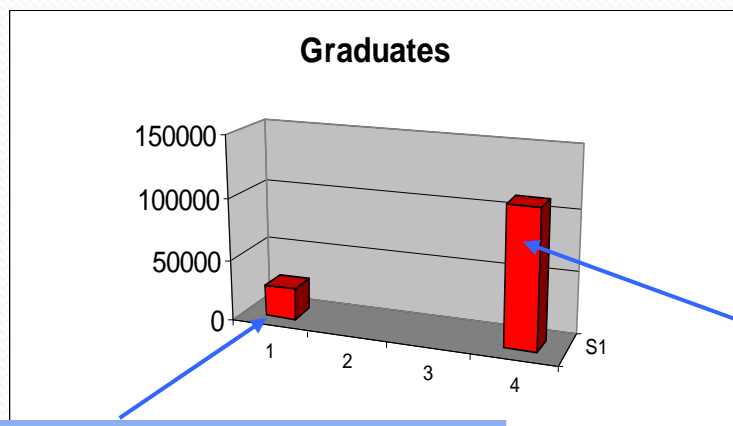
2005 vs. 1991 → 2.2 times more (total)

3.4 times more women!!

(Total academic staff are not available by Grades in these statistics)

Category of academic staff (National description):

- Grade A: Full professor
- Grade B: Associate professor (conferentiar)
- Grade C: Lecturer (lector / sef de lucrari)
- Grade D: Assistant professor



25,927 (1990/1991)

of which **70.7 % technical profile**

■ Graduates

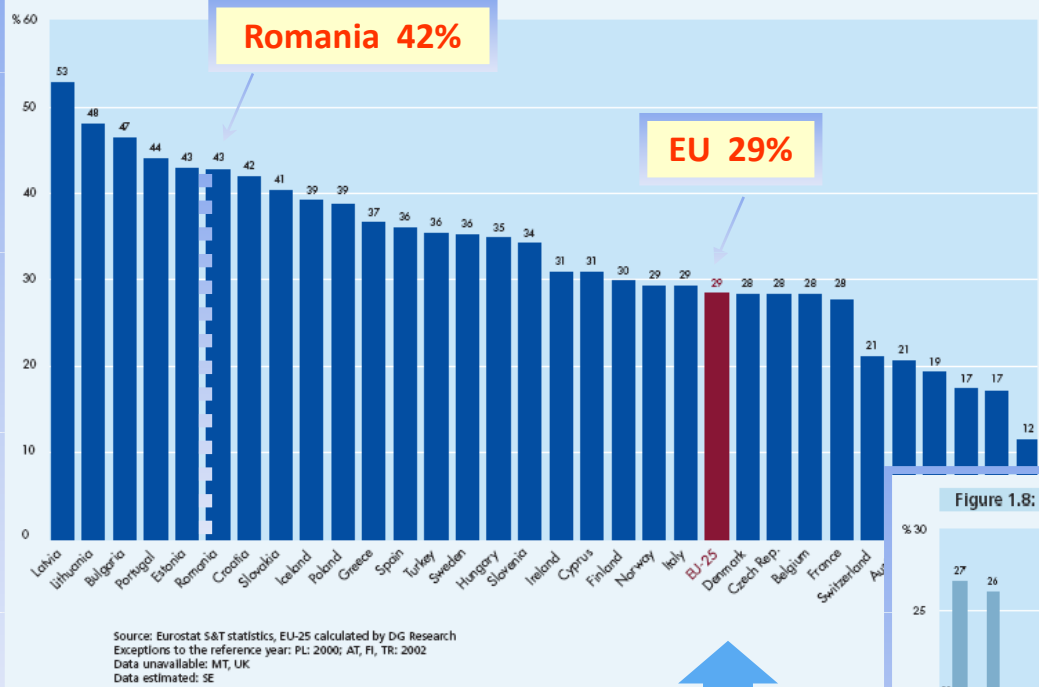
110,533 (2004/2005)

of which **21.3 % technical profile**



What do the EU statistics reveal for Romania?

Figure 1.6: Proportion of female researchers, 2003



Romania 42%

EU 29%

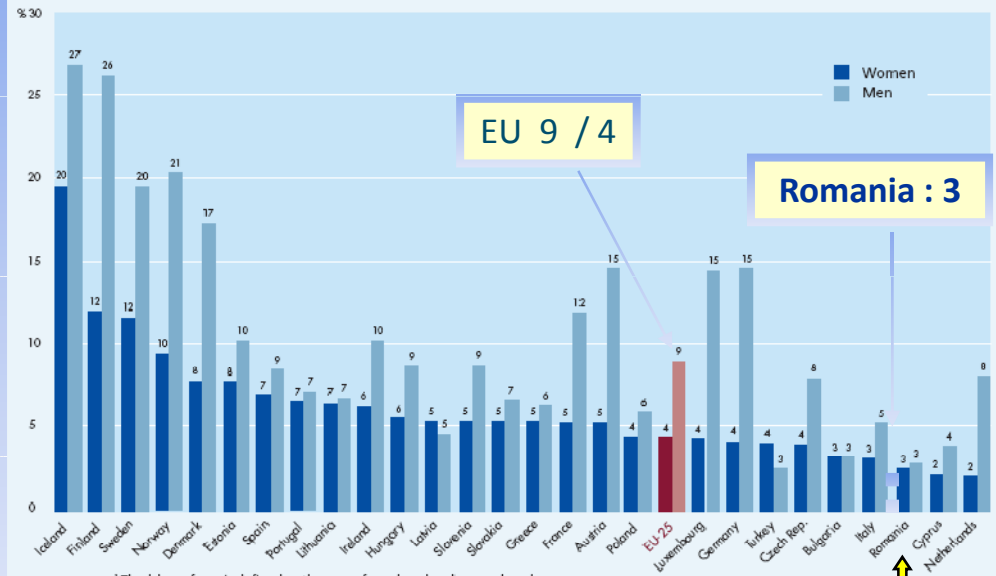
The proportion of women among researchers is higher in the new Central and Eastern European member states than in the old member states!

Source: Eurostat S&T statistics, EU-25 calculated by DG Research
 Exceptions to the reference year: PL: 2000; AT, FI, TR: 2002
 Data unavailable: MT, UK
 Data estimated: SE

Women tend to be better represented in the countries with the smallest research populations.

The low wages and inadequate equipment in the research sector, together with the opportunities offered abroad (especially in the US), have led to an outflow of researchers and an increase in the average age of R&D personnel. At present, more than 60% of the research staff is over 40 years old.

Figure 1.8: Researchers per thousand labour force¹ by sex, 2003



EU 9 / 4

Romania : 3

¹ The labour force is defined as the sum of employed and unemployed persons.

Source: Eurostat S&T statistics; Community Labour Force Survey (LFS)
 Exceptions to the reference year: CH, PL: 2000; AT, FI, TR: 2002
 Data in data tables: IT, Portugal and Slovenia: Estimated data; SE: 01

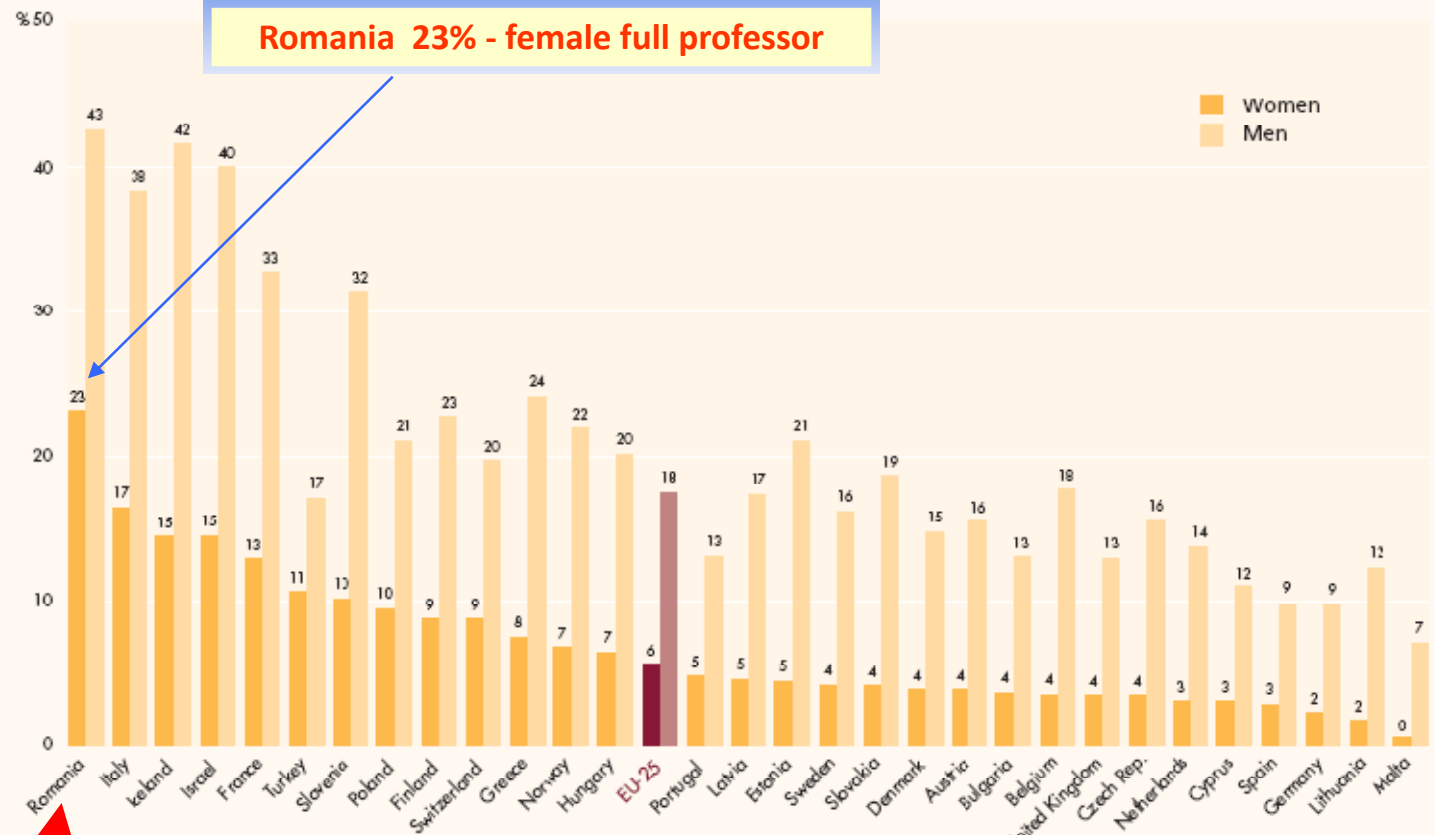


Table 2.3: Proportion of female researchers in the Higher Education Sector (HES) by field of science, 2003

	NATURAL SCIENCES	ENGINEERING AND TECHNOLOGY	MEDICAL SCIENCES	AGRICULTURAL SCIENCES	SOCIAL SCIENCES	HUMANITIES
EU-25	29.1	21.3	39.9	39.7	39.3	38.3
Austria	21.6	12.6	35.8	40.9	36.3	42.8
Cyprus	27.8	12.3	35.8	40.9	34.4	43.0
Czech Republic	26.4	12.3	35.8	40.9	34.4	43.0
Denmark	23.4	12.3	35.8	40.9	34.4	43.0
Estonia	34.4	12.3	35.8	40.9	34.4	43.0
Germany	17.7	12.3	35.8	40.9	34.4	43.0
Hungary	28.4	12.3	35.8	40.9	34.4	43.0
Ireland	39.1	12.3	35.8	40.9	34.4	43.0
Latvia	43.6	12.3	35.8	40.9	34.4	43.0
Lithuania	47.2	12.3	35.8	40.9	34.4	43.0
Luxembourg	50.0	12.3	35.8	40.9	34.4	43.0
Malta	15.8	12.3	35.8	40.9	34.4	43.0
Norway	26.2	12.3	35.8	40.9	34.4	43.0
Portugal	49.2	12.3	35.8	40.9	34.4	43.0
Poland	38.0	12.3	35.8	40.9	34.4	43.0
Slovakia	36.4	12.3	35.8	40.9	34.4	43.0
Slovenia	24.9	12.3	35.8	40.9	34.4	43.0
Spain	38.7	12.3	35.8	40.9	34.4	43.0
Sweden	27.6	12.3	35.8	40.9	34.4	43.0
Bulgaria	55.0	12.3	35.8	40.9	34.4	43.0
Iceland	35.4	12.3	35.8	40.9	34.4	43.0
Romania	47.3	12.3	35.8	40.9	34.4	43.0
Turkey	37.4	12.3	35.8	40.9	34.4	43.0

Source: Eurostat S&T statistics, EU-25 calculated by DG Research. Exceptions to the reference year: LU, SE: 2001; Data unavailable: BF, FI, FR, IT, NI, PL, UK, CH; Estimated data: LT, IE, SE

Figure 3.3: Percentage of grade A among all academic staff by sex, 2004

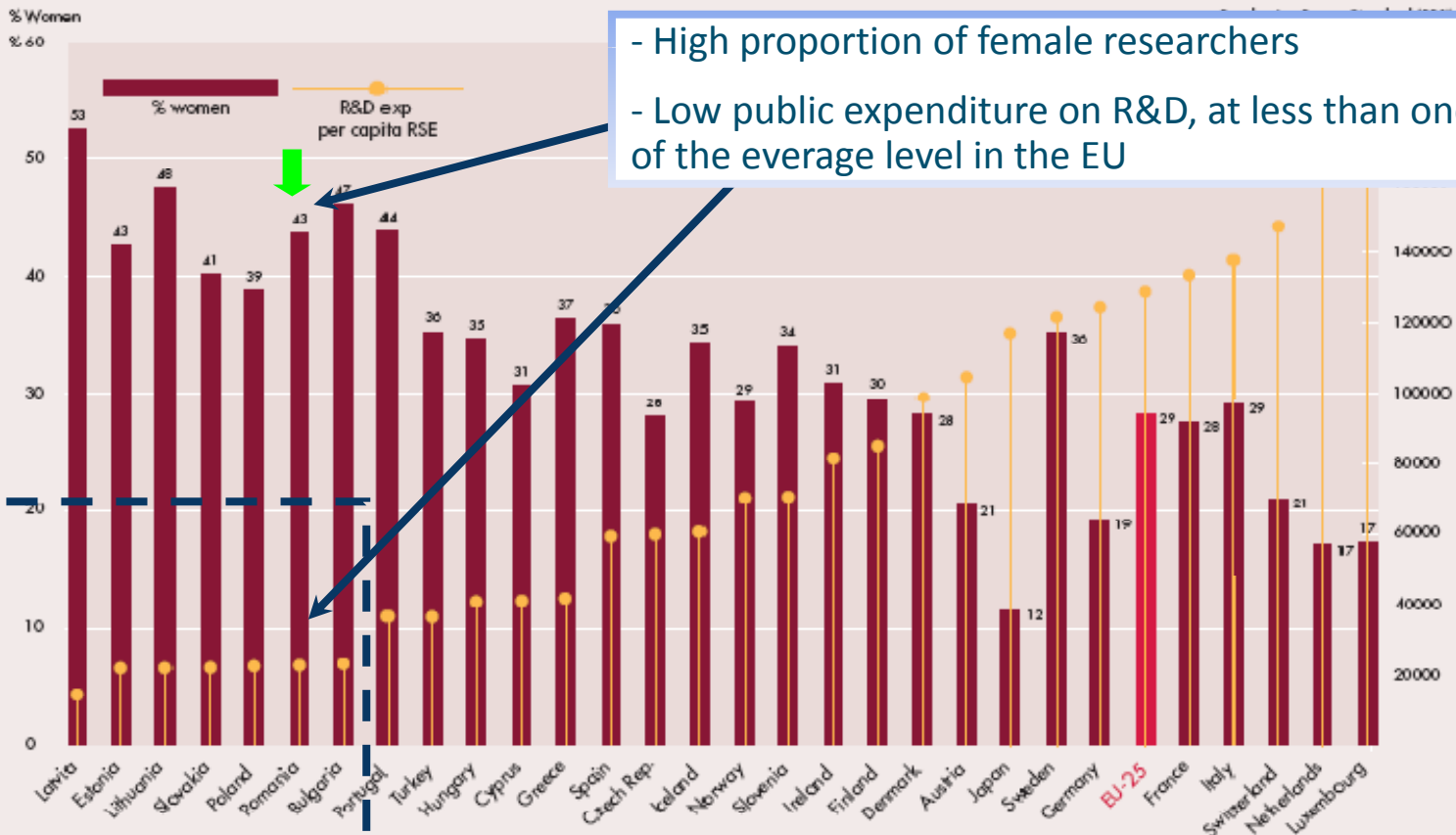


Source: WIS database DG Research, EU-25 calculated by DG Research

BE-total of BE-FL + BE-FR



Figure 4.3: Proportion of female researchers and R&D expenditure in Purchasing Power Standards (PPS) per capita researcher, 2003



- High proportion of female researchers
- Low public expenditure on R&D, at less than one quarter of the average level in the EU

Purchasing power parities (PPP) are defined as currency conversion rates that both convert national currencies to a common currency and equalise the purchasing power of different currencies. Purchasing power standard (PPS) is the artificial common currency into which national currencies are converted

Source: Eurostat S&T Statistics
Researchers
EU-25 calculated by D-G Research

R&D Expenditure
EU-25 calculated by Eurostat

The proportion of female researchers is the highest in those scientific fields and countries where the least money is spent on research !!



...instead of Conclusions:

- ❑ The proportion of female scientists/researchers is much higher in Romania if compared with the old EU member states. This seems to be a common characteristics for the new Central and Eastern European member states.
- ❑ The proportion of female researchers is the highest in those scientific fields and countries where the least money is spent on research from the GDP.
- ❑ Women usually are substitutes to those men that left the research profession because of its low prestige and/or the low salaries in the past 15 years.
- ❑ 'Transition period' - changes in higher education system during the last 15 years.
- ❑ The prospects of young scientists are very bleak due to the unavailability of funding and the rigid patterns of recognition → 'brain drain'.

Thank you!