GENDER ISSUES IN THE EU: HOW BRUSSELS IS MOVING TOWARDS GENDER EQUALITY

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FROM NEW ORLEANS
FIP SESSION

Einstein’s quote, “Science is not a high status activity except as an admission card into the community of modern countries “

I would say therefore that

for women to be left out of science means to be left out of the modern world.
OUTLINE

1. The EU Commission
2. EU gender trends in S&T
3. What is happening in EU
4. Examples from high energy physics
**EU GLOSSARY**

- **European Community (EC)**:
  - the Member States (MS)

- **European Union (EU)**:
  - MS + Community Institutions

- **European Council** sets the political guidelines:
  - EU heads of State + President of the EU Commission

- **Institutions of the European Community**
EC INSTITUTIONS

- EU Council of Ministers:
  overall governance designated by Member States (MS) Governments with presidency rotating through MS every 6 months

- EU Parliament:
  consultation and co-decision with the Council of Minister
  selected by people in each MS

- EU Commission: designated by MS, is the executive body, and normally lasts 5 years
- Court of justice
- Court of Auditors
THE EU COMMISSION

• Is the effectively the governing body, proposes policy, responsible for implementing and managing Community programs

• The Commissioners are 27, one for each MS and each commissioner is responsible for a Directorate-General or an area of work

• Directorates are managed by a Director General, which is a permanent staff
THE EUROPEAN COMMISSION

• The Commission
  – 27 Commissioners for all facets of EU life
  – 9 of them are women
  – Commissioner for Science and research

DG Research

EU COMMISSIONERS
MEN 67%
WOMEN 33%
Figure 1: Employed human resources in science and technology (HRST) aged 25-64 by sub-population and gender in the EU, 2006

Female

- HRSTE = 24.7 million persons
- HRSTC = 17.6 million persons
- HRSTO = 29.7 million persons

Male

- HRSTE = 26.6 million persons
- HRSTC = 16.6 million persons
- HRSTO = 28.9 million persons

EU-27 estimates with 2005 data for BE and IE. For definitions of HRST, see methodological notes (p. 7). Source: Eurostat HRST statistics

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-08-010/EN/KS-SF-08-010-EN.PDF
Human resources in science and technology as a share of labour force - Total (%)

HRST as share of the labor force

18.4%  50.8%

Source: EUROSTAT
HRSTO=Human Resources employed in S&T

Female share

45% → >55%
UNIT 5 OF THE DG-RESEARCH AND THE HELSINKI GROUP

• During the last year of Edith Cresson’s mandate as a Commissioner of Science and Research in 1999, the spotlight was focused on women in science and a special unit was started, unit 5 of the Research Directorate General, DG-XII

• A group of EU statistical correspondents and scientists held their first meeting in Helsinki

• The ETAN (European Technology Assessment Network) report on Women and Science was prepared by the Helsinki Group and published in early 2000

• In FP7(2007-2013) the mandate is covered by the Science and Society Unit and EUROSTAT
WHY MORE WOMEN IN S&T?

• The rationale at the Commission level is that Human resources in S&T (HRST) can sustain and increase Europe competitiveness in S&T

• Women were identified as human potential for further development
THE EU SCIENCE AND SOCIETY LINK

Across EU 29% of researchers are women
Only 18% of researchers in Business & Enterprise Sector are women
In higher education only 18% of highest academic grade are women
In engineering and technology at the top only 5.8% are women
FOCUS ON EASTERN COUNTRIES

• The Enwise countries are
  – Bulgaria
  – Czek Republic
  – Estonia
  – Hungary
  – Latvia
  – Lituanina
  – Poland
  – Romania
  – Slovakia
  – Slovenia
S&T Statistics

Employment

% of women

Scientists & Engineers

Tertiary educated employed as professionals or technicians (HRSTC)

PhD professionals or technicians

Total employment

Scientists & Engineers

Source: Eurostat Labour Force Survey
EU-27 estimated by Eurostat

4/29/08

APS-FIP

St. Louis
PHD GRADUATES IN PHYSICAL SCIENCE & ENGINEERING

- Italy at 45% in physics
- Portugal more than 50% in physics
- Lituania highest in Engineers
EDUCATION IN S&T

PROPORTION OF FEMALE PHD, 2003

EU-25

PORTUGAL

ITALY

US

MATH & STAT
ENGINEERING
PHYSICAL SCIENCES
PHD EMPLOYMENT IN NATURAL SCIENCES IN THE EU

- Natural Sciences include life sciences, Math, Chemistry and Physics
- Highest numbers in Portugal
- Details are not available for all countries
- Source: eurostat S&T, DG research for EU-25
CAREER PATTERNS

• The scissor diagram

• Who reaches the top?
Figure 3.1: Proportions of men and women in a typical academic career, students and academic staff, EU-25, 1999-2003

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

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

Source: Eurostat Education data, DG Research, WIS database seniority Grades.
2003
ISCEDSA Students:
Data unavailable: FR
Exceptions to the reference year: LU: 1999; EL: 2002
ISCEDG Students:
Data unavailable: FR, LU, DE, SI
Exceptions to the reference year: EL: 2002
Grade C, B, A:
Data unavailable: IE, LU
NL: FTE; SI: Data estimated; FR: Grade C unavailable
1999
ISCED SA Students:
Exceptions to the reference year: BE, PI: 2000; EL: 2002; Data unavailable: FR
ISCEDG Students:
Data unavailable: DE, FR, LU, SI
ISCED 6 Students:
Data unavailable: DE, FR, LU, SI
SENIORITY IN S&T, 2004

PROPORTION OF FEMALE GRADE A STAFF

Proportion of female Grade A staff

EU-25, Italy, Portugal (highest), Turkey

Natural Sciences, Engineering, Humanities
The EU funded research

- The EU funds evaluate a large number of proposals in all fields of science and has become a very important funding source.
- Among the type of projects there are
  - Individual grants and fellowships (Marie Curie)
  - Prizes
  - Research and Training Network grants - a structure “invented” by Bruxelles
THE RESEARCH AND TRAINING NETWORKS

• Networks of researchers, at least 3 different member states
• Typically 10-12 institutions from 5-8 different countries
• Average budget 4 Meuro for a 4 year period
• Chosen through an evaluation process resulting in a 10 % success rate
EU RECOMMENDATION: GOAL OF 40% WOMEN IN ALL SCIENTIFIC PANELS
What the EU is doing to empower more women in S&T

- Aim to 40% presence of women in scientific panels
- Presently roughly 30%, even in physics
- Vademecum for project officers
EVALUATION PANELS

- Women are well represented at the evaluation level even in hard sciences, like physics
- Evaluation panels have a typical 30-40 % women presence
- Evaluators are chosen among a very larger pool where women are well represented: Europe is very large with many Government research Institutions and prestigious universities -> the pool is large
IS IT DIFFICULT TO REACH A 30% WOMEN PRESENCE?

• Not difficult since the independent expert evaluators are chosen among a large pool of scientists mostly from Europe, both universities and industry, and there are many excellent women
IS THIS POLICY EFFECTIVE?

• In general, the evaluation process, once launched, is gender-blind except that one of the evaluation criteria - typically impact or added value - includes a concern with equal opportunity.

• In principle it could be used to promote projects which have women in prominent network positions, like node-scientists or members of Executive Committees.

• It does help to focus on the existence of excellence among women scientists.
NEXT SLIDES WERE NOT SHOWN BECAUSE OF TIME LIMIT
TWO EXAMPLES OF GENDER DISTRIBUTION IN HIGH ENERGY PHYSICS

• CERN
  – DELPHI experiment at LEP
  – ATLAS experiment at LHC
Equal Opportunities at CERN

Tiziano Camporesi - Chair of the Equal Opportunities Advisory Panel
Women have appeared in the research job market lately

Study performed within the DELPHI experiment at LEP (more than 750 thesis over the life of the experiment!)

Early 1980’s: <5% women students. 2000: 25% of students are women

The CERN hiring statistics in recent years shows that these women physicists and engineers have equal chances (in fact slightly better) than their male colleagues.
HIGH ENERGY PHYSICS IN A WORLD-WIDE EXPERIMENT

• ATLAS is a Large hadron Collider experiment with over 2000 high energy physicists from everywhere in the world and its gender composition sheds light on how different countries are represented in proportion of women scientists
HIGH ENERGY PHYSICS: THE ATLAS EXPERIMENT

https://twiki.cern.ch/twiki/bin/view/Atlas/AtlasWomenPage?
US VS EU IN ATLAS 2008

- Women from EU are present in larger proportion than from US
- Possibly also because of need to commute from US to Europe (family is a problem)
(SOME) WOMEN IN ATLAS(2008)