

# Gendering the Science and Technology Agenda



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# UNESCO and Gender Equality



# Priority Gender Equality

Gender Equality is one of UNESCO's two global priorities:

"Priority Gender Equality: As called for by the 2005 World Summit Outcome document, priority will also be given to the pursuit of gender equality through action in all of UNESCO's fields of competence supported by a two pronged approach pursuing both gender-specific programming and gender mainstreaming in Member States and within the Organization."

*(UNESCO's Medium Term Strategy for 2008-2013; 34 C/4)*

The organization-wide **Gender Equality Action Plan** defines three expected outcomes for UNESCO:

- Progressive increase in the number and quality of Gender Responsive and Gender Transformative programmes and initiatives in all sectors.
- Improved and visible UNESCO support to Women's Empowerment and Gender Equality in Member States through policy dialogue and programmes.
- Commitment to Gender Equality institutionalized in the Secretariat and in programming.

Specific expected outcomes were also defined for each sector.



# Leveraging Science & Technology (S&T) and Engineering for Development and Gender Equality: UNESCO's perspective

The two biennial priorities for Natural Sciences for 2010 and 2011 are:

- Policies and capacity-building in science, technology and innovation for sustainable development and poverty eradication
- Sustainable management of freshwater, ocean and terrestrial resources, including renewable sources of energy, and disaster preparedness and mitigation



## UNESCO's Commitment to Gender Equality and to S&T and Engineering in Natural Sciences

- Supporting the design, implementation and evaluation of **gender responsive science and technology** policies
- Ensuring a **gender-balanced representation** in science policy dialogue platforms and international scientific & policy networks
- Supporting **key role of women** in the transmission, preservation and elaboration of local and indigenous knowledge related to sustainable development, natural disaster preparedness and response, biodiversity conservation and climate change
- Promoting **gender-sensitive and socio-culturally relevant** approaches incorporating local and indigenous practices for risk reduction
- Supporting **young women scientists** through fellowships or grants, providing mentoring, awarding prizes to increase the visibility of successful women scientists, fostering training for women scientists at various levels, encouraging the creation of associations and networks of women scientists and engineers, reinforcing the cooperation of the UNESCO Chairs specifically focused on women in S&T, and increasing the public understanding of science with a focus on girls and women

*UNESCO's Programme and Budget for 2010 and 2011 (35 C/5)*

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Presentation of UNESCO's  
Background Paper: Women's and  
Girls' Access to and Participation in  
Science and Technology



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- o In an increasingly competitive global economy, national economies require **scientific knowledge & a capable workforce** to exploit it
- o Scientific & technological literacy **empowers citizens** to make informed decisions relating to implications these advances have on national life
- o Until now, technological advances have principally been aimed at improving **men's daily lives rather than those of women**
- o **Gender-based discrimination** must be addressed as there is a broad range of development issues in which S&T plays a fundamental role and would benefit from increased women's participation, for example:
  - o HIV & AIDS
  - o Climate change
- o Gender issues have received increased international recognition in the field of development and S&T



## Education & Research

- o « **Leaky pipe** » - difficult to **retain** girls within S&T and for them to **make the transition** from higher education to professional life
- o 29% of the world's researchers are women, but regional disparities occur, for example 46% in Latin America and the Caribbean compared to 15% in Asia
- o There is **no gender parity** in primary or secondary education in **60%** of countries
- o Horizontal gender segregation occurs within Sciences at PhD and research level
- o In 91% of countries, men outnumber women on science and engineering courses
- o Women outnumber men at Masters level, but not at doctoral level and beyond – **56% of PhD graduates and 71% of researchers are male** at the global level



## Breaking Barriers

- o Initial reasons for gender disparity in S&T can be factors leading to gender based discrimination in **poverty, basic literacy** and other fundamental areas touching on women's basic human rights
- o Education and career choices are subject to **international, national, personal, family and institutional** forces
- o **Mass media** perpetuates the social construct of S&T as a male-dominated sphere.

### Examples of UNESCO's work:

- **Establishment of five UNESCO Chairs on Science, Technology and Gender in Mexico, Morocco, Poland, Republic of Korea and Spain.**
- **Creation of the L'OREAL-UNESCO Awards and Fellowships honouring women scientists and young female researchers**



## Education and Careers Orientation

- o **Quality of learning** rests heavily on the **quality of the teacher** and positive and negative messages that are communicated within the classroom
- o Girls are often shown to be discouraged from learning S&T **even when** teachers are capable
- o Text books and other education materials **perpetuate the gender bias** and idea of S&T being a traditionally male domain

### Example of UNESCO's work:

- o **“Girls and Science” – a training module to motivate girls to embark on a career within S&T in the quest for self-dependence and poverty reduction, and to reduce the development gender disparities in this field in Africa**



# Women with disabilities have particular needs

- o Girls with disabilities **do not benefit** from schooling or education in less developed countries
- o A majority of disabled women in less developed countries are **illiterate**
- o Disabled girls and women need access to education including technical and vocational training, that is properly suited to their needs in order to enjoy their right to benefit from technological and scientific access.

## Example of UNESCO's work:

- **In combating discrimination and violence against women with disabilities, UNESCO disseminates tools with a Human Rights Based Approach for women and girls with disabilities. Research in this area will be undertaken within the framework of the activities of the “Research and Documentation Centre for Women, Gender and Peace-Building” in the Democratic Republic of Congo.**



## Retaining and Promoting Women Scientists

- o Even after initial barriers are overcome, women and girls **suffer discrimination** in terms of promotion and retention within S&T careers
- o Biological & social roles of women need to be recognized, including the **unequal division of household labor**, such as housework and childcare
- o 27% of unemployed women with science and engineering doctorates cited **family responsibilities** for not working, compared with 1.5% of men (*The American National Science Foundation, 2008*)
- o In Latin American universities, married women reported spending 20-30 hours a week on family activities and 40-60 hours on professional work. Those who taught or worked in the lab added 20 extra hours to these commitments. (*UNESCO study: Women, Higher Education and Development*)

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Other examples of  
work within UNESCO



## Gendering the Ethics of S & T

- o Bioethics entails the application of human rights principles to the life and health sciences, and to technology
  - o Examples of areas of research: medically assisted reproduction, prenatal and pre-implantation diagnostic techniques, human cloning
  - o The founding principles of both human rights and bioethics include personal autonomy, the primacy of the interests of the individual person and exclusion of any consideration of race, gender or biological, social, cultural or economic characteristics
- *The progress and applications of science and technology must be assessed in the light of these principles*

### Example of UNESCO's work:

- **UNESCO Universal Declaration on Bioethics and Human Rights (UNESCO, 2005) – See Preamble and Art 10.**
- **UNESCO Research and Publication: “Women’s Rights and Bioethics”, edited by Lorraine Dennerstein (2001)**



# Gender Equality and ICTs: Free and Open Source Software (FOSS)

- o FOSS is liberally licensed software that grants the users the right to use, study, and change its design through the availability of its source code
- o Globally, fewer than 20% of ICT developers and FOSS users are women. At entry level, women's wages are 17% of men's. By the time women reach their 40s, they will typically be earning 40% less than men
- o There is an urgent need to address inequalities between women and men's access and participation in all aspects of the development of FOSS on cultural, economic, political and technical levels, especially in the developing world

## Example of UNESCO's work:

- **UNESCO has undertaken an informal analysis of the current digital divide in the FOSS world aiming at identifying how UNESCO can further promote women's access to FOSS by developing gender-sensitive policies on the development and implementation of FOSS, woman-to-woman mentoring/training programs and improved implementation of FOSS in developing countries.**

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UNESCO's  
Recommendations



# Recommendations

- o Promote women's access to formal education, technical and vocational education and training (TVET) and non-formal education;
- o Review the teacher education policies;
- o Take into account socio-cultural factors that may disadvantage girls when formulating policies;
- o Integrate S&T into non-formal education;
- o Develop effective, high-quality S&T education programmes;
- o Tackle negative gender-stereotypes concerning the perceived suitability of women in S&T careers:
  - o Via the national and international media;
  - o Via educational policies, in particular gender-sensitive teacher training and educational material;
- o Enlist positive female role models;
- o Encourage girls to go into careers in S&T, using career guidance;
- o Develop relevant, internationally comparable sex-disaggregated statistics.

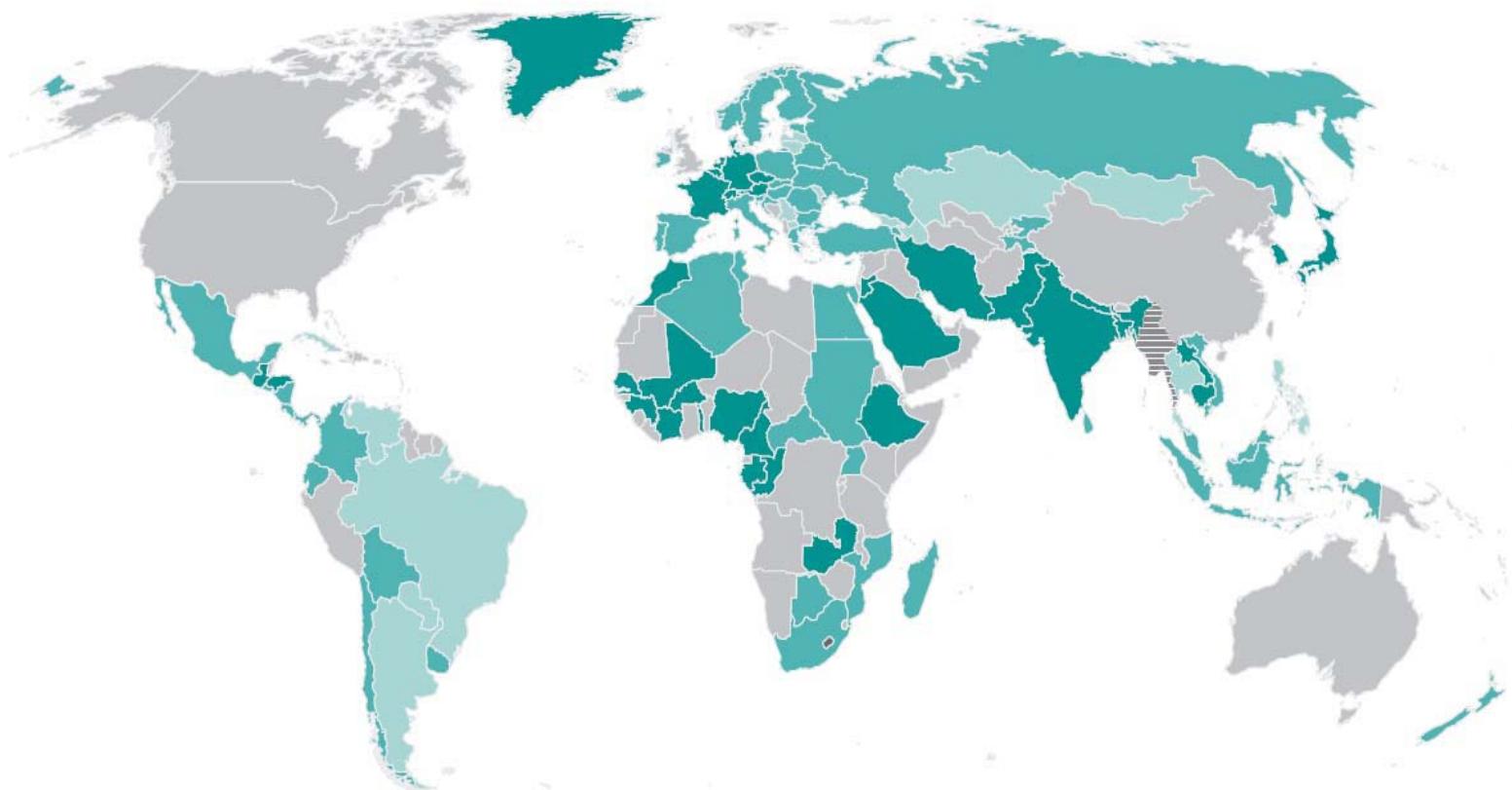
## DIVISION FOR GENDER EQUALITY

### What is the share of women among researchers?

Women as a share of total researchers, 2007 or latest year available

Percentage of female researchers

0% → 30%    30.1% → 45%    45.1% → 55%    55.1% → 70%    70.1% → 100%    Data not available



Note: Data are based on headcounts, except for India and the Congo, where the number of researchers is based on full-time equivalents.  
Source: UNESCO Institute for Statistics database.

*"The 2010 Global Education Digest: Comparing Education Statistics Across the World", UNESCO Institute of Statistics*