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## Global and Commonwealth Mandates for Science and Technology

### Global Mandates

Governments have at their disposal a rich array of recommendations and agendas for action already endorsed in Conventions, Declarations and international agreements. Within these documents can be found articles addressing issues of gender, science and technology and suggested strategies for action. This chapter will provide a summary of this valuable resource.

At the most fundamental level, equality between women and men is enshrined in the Charter of the United Nations and the Universal Declaration of Human Rights. It is also inherent in major UN legally binding covenants on human rights, political and civil rights and economic, social and cultural rights. In particular, the 1979 UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) further defined the objectives and measures necessary to achieve gender equality in both public and private life. CEDAW recognises that the impact of legislation must be taken into account in determining whether it is discriminatory, and that positive action measures are sometimes necessary to correct historical patterns of discrimination.

In the UN Decade for Women between 1975 and 1985, recommendations specific to gender, science and technology began to emerge. In 1979, the UN World Conference on Science and Technology for Development (UNCSTD) identified only one article in its *Vienna Programme of Action* that was specific to women. But by 1984, the UN Panel of the Advisory Committee on Science and Technology for Development advanced a full agenda of actions related to gender entitled 'Science and Technology and Women' at the Nairobi End-of-Decade Meeting. The *Nairobi Forward-looking Strategies*, in effect from 1985 to 2000, provided a comprehensive blueprint for action on a wide range of socio-economic, political and cultural issues as well as science and technology. The 'Tech and Tools' pavilion at Nairobi celebrated women's scientific inventions and local knowledge systems.

By the early 1990s, the UN Commission on Science and Technology for Development (UNCSTD) adopted gender as one of its three themes. In 1995, the CSTD Working Group tabled its *Declaration of Intent with 7 Transformative Actions* at the UN Economic and Social Council. This agenda for gender in science and technology was also taken to the 1995 Fourth World Conference on Women in Development in Beijing. The 1995 *Commonwealth Plan of Action on Gender and Development* was an additional input to the negotiations at the Beijing Women's Conference.

The 1999 UNESCO Declaration on Science and the Use of Scientific Knowledge and the *Science Agenda – Framework for Action from the UN World Conference on Science* included a full theme on gender in science and technology. In June 2000, the UN

General Assembly held a Special Session to review progress made in implementing the PFA. In the Outcome Document adopted by the plenary, 'Further actions and initiatives to implement the Beijing Declaration and the Platform for Action', governments agreed to undertake a number of actions in the area of science and technology. Many other agreements contain recommendations and priorities for action on gender and science and technology. These include the UN Conference on Environment and Development, Agenda 21 (1992), the UN International Conference on Population and Development Programme of Action (1994), as well as the World Summit for Social Development (1995).

## **The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979)**

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167 countries have ratified as of February 2001, including all but six Commonwealth countries.

Article 1 of CEDAW defines discrimination against women as: 'any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field'. This definition has been accepted by the Human Rights Committee as applicable to discrimination under the International Covenant on Civil and Political Rights (ICCPR).

Unfortunately, a number of States Parties have ratified the Convention with reservations, some of which are substantive and present an obstacle to gender mainstreaming. The Committee on the Elimination of Discrimination Against Women has called on states to narrow the terms of reservations, to consider whether they are needed and to withdraw them where possible. States are therefore urged to remove reservations or to narrow their scope.

By ratifying CEDAW, States Parties agree *inter alia* to:

- ◆ Condemn discrimination against women in all its forms and pursue without delay a policy of eliminating discrimination against women. This includes embodying the principle of the equality of men and women in national constitutions or other appropriate legislation, and modifying or abolishing existing laws, regulations, customs and practices which constitute discrimination against women (article 2).
- ◆ Take all appropriate measures, including legislation, in all fields – in particular in the political, social, economic and cultural fields – to ensure the full development and advancement of women (article 3).
- ◆ Adopt temporary special measures—which shall not be considered discrimination as defined in the Convention— aimed at accelerating de facto equality between men and women (article 4).
- ◆ Eliminate discrimination against women in political and public life, in particular to ensure to women the right to participate in the formulation of government policy and its implementation and to hold public office and perform all public functions at all levels of government (article 7).
- ◆ Ensure women equal rights with men in the field of education, including equal access to education at all levels and the elimination of stereotyped concepts of the roles of men and women (including through the revision of textbooks and the adaptation of teaching methods) (article 10).

- ◆ Eliminate discrimination against women in employment, ensuring women the right to: free choice of profession and employment; promotion, job security and all benefits and conditions of service; receive vocational training and retraining; equal remuneration, including benefits; and equal treatment in respect of work of equal value. Appropriate measures will also be taken to prevent discrimination against women on the grounds of marriage or maternity and to ensure their effective right to work (article 11).
- ◆ Eliminate discrimination against women in rural areas so that they participate in and benefit from rural development on a basis of equality of men and women. In particular, they will ensure that rural women have the right to participate in the elaboration and implementation of development planning at all levels and to obtain all kinds of training, both formal and non-formal, including community and extension services in order to increase their technical proficiency (article 14).

### **The Nairobi Forward-Looking Strategies for the Advancement of Women (1985)**

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Participants: Commonwealth Secretariat, all Commonwealth countries except Tonga and Nauru.

The UN Third World Conference on Women (Nairobi, Kenya) called for, *inter alia*:

*“The full and effective participation of women in the decision-making and implementation process related to science and technology including planning and setting priorities for research and development and the choice, acquisition, adaptation, innovation and application of science and technology for development.”*

### **The Beijing Declaration and Platform for Action (1995)**

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Although gender in science and technology is not one of the 12 Critical Areas of Concern identified in the Platform for Action (PFA) that was agreed to at the 1995 UN Fourth World Conference on Women in Beijing, there are cross-cutting references to the issue throughout the document. This was largely due to the lobbying and advocacy work of the Once and Future Action Network (OFAN), which was established in 1994 in response to the need for improved co-operation among organisations working in the area of gender, science and technology. The following actions to be taken by governments were identified in the PFA by the International Women’s Tribune Centre and UNIFEM (IWTC and UNIFEM, 1996):<sup>1</sup>

#### **Poverty:**

- ◆ mobilise and enact legislation to protect women’s equal access to economic resources, including technologies (60f, 61b).

#### **Education:**

- ◆ eliminate gender discrimination in education, including universal access to primary education, gender parity in tertiary education and decision/policy-making (80a,b,c,d);
- ◆ promote a definition of literacy that includes scientific and technical knowledge (81f);
- ◆ provide information to women and girls on the availability and benefits of training programmes in science and technology (82c);

#### **Note**

1 Numbers in brackets in the policy documents refer to the paragraph in which the action is articulated.

- ◆ diversify vocational training and retention in non-traditional fields such as science, math, engineering, environmental sciences and technology and information technology (82e);
- ◆ encourage adaptation of curricula and teaching materials, develop teacher training regarding equity in science and technology teaching (82g), and develop teaching materials to encourage participation of girls and women in technical and scientific fields (82h);
- ◆ increase training in technical and agricultural fields to increase income-generating opportunities and participation in economic decision-making in science and technology (82j);
- ◆ take measures to increase the number of women in educational policy and decision-making positions, especially in the scientific and technological fields (83f);
- ◆ use appropriate and affordable technologies and media to reach rural women in remote areas (83g);
- ◆ establish a mechanism to monitor implementation of educational reforms and establish technical assistance programmes (84b);
- ◆ provide funding for special programmes in math, science and computer technology (85b).

#### **Health:**

- ◆ support commitments made at the International Conference on Population and Development, the Social Summit and CEDAW (106a);
- ◆ promote ethical and gender sensitive standards by health workers, redesign health training and other reforms to health care practice and education (106);
- ◆ link traditional and indigenous knowledge with modern medicine (109b);
- ◆ increase the number of women in leadership positions in the health professions, including researchers and scientists (109c).

#### **Armed Conflict:**

- ◆ reduce military expenditures and reallocate funds for basic needs (E2);
- ◆ promote technology transfer and scientific research in the area of mine clearance (143e iii).

#### **Economy:**

- ◆ undertake reforms to give women equal rights to economic resources, including natural resources and appropriate new technologies and extension services (165e, 166c,e);
- ◆ promote gender-sensitive policies and measures to empower women as equal partners with men in technical, managerial and entrepreneurial fields (165q);
- ◆ ensure women's priorities are included in public investment (167d);
- ◆ develop programmes for training in new technologies, promote vocational training in non-traditional areas and encourage women to take on non-traditional jobs, especially in science and technology (173b, 178g);
- ◆ promote women's studies and research in scientific and technological fields (175e);
- ◆ recognise and encourage the contribution of research by women scientists and technologists (175h).

#### **Power and Decision-making:**

- ◆ take measures to ensure women's equal access to and full participation in power structures and decision-making (G1);
- ◆ take positive action to build a critical mass of women leaders, executives and managers (192a);
- ◆ restructure recruitment and career development programmes to ensure that all women, especially young women, have equal access to managerial, entrepreneurial, technical and leadership training (192f).

**Institutional Mechanisms:**

- ◆ promote an active and visible policy of mainstreaming a gender perspective in legislation, public policies and programmes (202);
- ◆ regularly review national policies and programmes from a gender perspective (204b).

**Media:**

- ◆ encourage training programmes for women in the new communication technologies (241a, 242b);
- ◆ promote balanced and non-stereotyped portrayals of women in the media (J2).

**Environment:**

- ◆ facilitate and increase women's access to information and education, including in the areas of science and technology (253b, 256h);
- ◆ encourage the protection and sharing of the benefits arising from the use of knowledge, innovations and practices of women of indigenous and local communities (253c);
- ◆ integrate a gender perspective in the design and implementation of resource management mechanisms and production techniques (253e);
- ◆ take gender impact into consideration in the work of the UNCSTD and other UN bodies (254a);
- ◆ increase the number of women scientists and technical advisors involved in environmental planning and programming (254d, 256i);
- ◆ facilitate women's access to knowledge, skills and environmentally sound technologies to support and strengthen their crucial roles and their expertise in resource management (255b, 256j, 256k, 258a,b,v);
- ◆ support research on the gender impact of environmental degradation and hazards (256c, 258b ii);
- ◆ integrate rural women's traditional knowledge and practices of sustainable resource management in environmental management and extension programmes (256f);
- ◆ sponsor research on women's role in natural resource management (256f, 258b,i);
- ◆ raise awareness on environmental and health impacts of technologies (257a).

**The Girl Child:**

- ◆ develop and adopt curricula, teaching materials and textbooks to improve the self-image, lives and work opportunities of girls, especially in mathematics, science and technology (276c);
- ◆ eliminate all forms of discrimination which result in harmful and unethical use of medical technologies such as prenatal sex selection and female infanticide (277c);
- ◆ ensure equal access to higher education, including vocational and technical education (279a).

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## **The UNESCO Declaration on Science and the Use of Scientific Knowledge**

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Participants: Over 1,800 delegates representing 155 countries, including approximately 80 Ministers of Science and Technology, Research and Education or their equivalents as well as the Chair and some members of the Commonwealth Science Council (CSC).

The World Conference on 'Science for the Twenty-first Century: A New Commitment', was held in Budapest, Hungary, from 26 June to 1 July 1999 under the aegis of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Council for Science (ICSU). Participants agreed that access to scientific knowledge for peaceful purposes from a very early age is part of the right to education belonging to all men and women, and that science education is essential for

human development, for creating scientific capacity and for having active and informed citizens (10). They also noted that there is a historical imbalance in the participation of men and women in all science-related activities (24).

The Declaration on Science and the Use of Scientific Knowledge that resulted from the meeting proclaims *inter alia* that:

- ◆ Science education, in the broad sense, without discrimination and encompassing all levels and forms is a prerequisite for democracy and for ensuring sustainable development. It is essential that the fundamental role played by women in the application of scientific development to food production and health care be fully recognised, and efforts made to strengthen their understanding of scientific advances in these areas. It is on this platform that science education, communication and popularisation need to be built (34).
- ◆ Equality in access to science is not only a social and ethical requirement for human development, but also a necessity for realising the full potential of scientific communities worldwide and for orienting scientific progress towards meeting the needs of humankind. The difficulties encountered by women, constituting over half of the population in the world, in entering, pursuing and advancing in a career in the sciences and in participating in decision-making in science and technology should be addressed urgently. (42).

Participants at the meeting also developed a *Science Agenda-Framework for Action* from which the following are extracts:

- ◆ Initiatives to facilitate access to scientific information sources by scientists and institutions in developing countries should be especially encouraged and supported. Initiatives to fully incorporate women scientists and other disadvantaged groups from the South and North into scientific networks should be implemented (17).
- ◆ Science and technology policies should be implemented that explicitly consider social relevance, peace, cultural diversity and gender differences. Adequate participatory mechanisms should be instituted to facilitate democratic debate on scientific policy choices. Women should actively participate in the design of these policies (56).
- ◆ Government agencies, international organisations, universities and research institutions should ensure the full participation of women in the planning, orientation, conduct and assessment of research activities. It is necessary that women participate actively in shaping the agenda for the future direction of scientific research (78).
- ◆ Governments and NGOs should sustain traditional knowledge systems through active support to the societies that are keepers and developers of this knowledge, their ways of life, their languages, their social organisation and the environments in which they live, and fully recognise the contribution of women as repositories of a large part of traditional knowledge (86).

The Conference stressed that special efforts should be made by governments, educational institutions, scientific communities, NGOs and civil society, with support from bilateral and international agencies, to ensure the full participation of women and girls in all aspects of science and technology, and to this effect to:

- ◆ promote within the education system the access of girls and women to scientific education at all levels;
- ◆ improve conditions for recruitment, retention and advancement in all fields of research;

- ◆ launch, in collaboration with UNESCO and UNIFEM, national, regional and global campaigns to raise awareness of the contribution of women to science and technology, in order to overcome existing gender stereotypes among scientists, policy-makers and the community at large;
- ◆ undertake research, supported by the collection and analysis of sex-disaggregated data, documenting constraints and progress in expanding the role of women in science and technology;
- ◆ monitor the implementation and document best practices and lessons learned through impact assessment and evaluations;
- ◆ ensure an appropriate representation of women in national, regional and international policy- and decision-making bodies and forums;
- ◆ establish an international network of women scientists;
- ◆ continue to document the contributions of women in science and technology.

To sustain these initiatives governments should create appropriate mechanisms, where these do not yet exist, to propose and monitor introduction of the necessary policy changes in support of the attainment of these goals (90).

## **The Beijing +5 Outcome Document (2000)**

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Five years after Beijing, governments met in New York at a Special Session of the General Assembly entitled 'Women 2000: Gender Equality, Development and Peace for the Twenty-first Century' (popularly known as Beijing +5). The Ad Hoc Committee of the Whole produced an Outcome Document: 'Further Actions and Initiatives to Implement the Beijing Declaration and the Platform for Action'. Governments agreed to undertake a number of actions in the area of science and technology, including to:

- ◆ consider adopting national legislation consistent with the Convention on Biological Diversity to protect the knowledge, innovations and practices of women in indigenous and local communities relating to traditional medicines, biodiversity and indigenous technologies (106a);
- ◆ encourage and support the education of girls in science, mathematics, new technologies including information technologies, and technical subjects and encourage women, including through career advising to seek employment in high growth and high wage sectors and jobs (118i);
- ◆ develop programmes that support women's ability to create, access and promote networking, in particular through the use of new information and communications technology, including through the establishment and support of programmes to build the capacity of women's NGOs in this regard (134b);
- ◆ capitalise on the new information technologies, including the Internet, to improve the global sharing of information, research, strengths, lessons learned from women's experiences and study other roles that these technologies can play towards that goal (134h);
- ◆ facilitate the transfer to developing countries of appropriate technology, particularly new and modern technology and encourage efforts by the international community to eliminate restrictions to such transfers, as an effective means of complementing national efforts for further acceleration in achieving the goals of gender equality, development and peace (135m); and
- ◆ recognise the crucial role of and support women and women's NGOs and CBOs in the implementation of Agenda 21, by integrating a gender perspective in the formulation, design and implementation of sustainable environmental and resource management mechanisms, programmes and infrastructure (136f).

## Commonwealth Mandate

### The Commonwealth Plan of Action on Gender and Development (1995)

Signatories: All Commonwealth Heads of Government

The Commonwealth Plan states as its vision that the Commonwealth works towards 'a world in which women and men have equal rights and opportunities at all stages of their lives to express their creativity in all fields of human endeavour. This world is also one in which women are respected and valued as equal and able partners in establishing values of social justice, equity, democracy and respect for human rights. Within such a framework of values, women and men will work in collaboration and partnership to ensure people-centred sustainable development for all nations' (4.1.1).

To achieve this vision, the Commonwealth will (*inter alia*):

- ◆ establish a practical and innovative process which will ensure equality of access and equitable distribution of benefits to women and men in all spheres of social, economic and political life ... ;
- ◆ ensure that a commitment to gender equality informs political decisions at the highest level and permeates all the decision-making processes of member governments and the Secretariat;
- ◆ ensure the full participation of women in decision-making processes and empower them – through training, education, information, positive and/or affirmative action – to define and shape their societies as equal partners with men; and
- ◆ integrate gender considerations into all policies, programmes, and practices for sustainable development and commit sufficient resources to develop and apply appropriate strategies and methods to further this goal' (4.1.2).

*"Commonwealth governments agree to put in place national plans to implement the 1995 Commonwealth Plan of Action and to this end have agreed that the strengthening of institutional capacity is the sine qua non of the vision and actualisation of this Plan ... Fifteen areas are considered to be desirable components ..."* (4.4.2), including the following:

1. Establish and strengthen Gender Management Systems (GMS) and National Women's Machineries (NWMs)  
Institutional capacity will be strengthened by:
  - ◆ setting up Gender Management Systems;
  - ◆ placing NWMs at the highest possible level, either as independent structures or in significant ministries with adequate human and financial resources;
  - ◆ ensuring that those appointed have appropriate gender planning and gender analysis skills;
  - ◆ providing training where those skills are lacking;
  - ◆ establishing focal points for gender planning in all Ministries and major departments; and
  - ◆ ensuring that the officers in charge of the focal points are senior officials who will obtain training in gender planning.

This approach aims to mainstream gender into national and sectoral policies by increasing capacity in gender training, gender impact assessment, gender management and accounting systems and employing gender analysis in all development plans and programmes. The focus on NWMs shall not only strengthen them in their sphere of action, but shall also enable them to formulate and influence policies to address gender concerns.

2. Integration of gender issues in all national policies, plans and programmes:  
Gender policy appraisal and impact assessments should be routinely conducted and any harmful effects on women ... should be addressed.
3. Build capacity in gender planning:  
Develop skills and apply tools for gender planning, policy appraisal and impact assessment, gender budgeting and accounting, project analysis and evaluation. ...
4. Become a model of good practice as an employer:  
Implement training ... set goals ... [and] establish the necessary systems for monitoring and evaluation ...
5. Promote equal opportunities and positive and/or affirmative action throughout the country and consult women on priorities ...
6. Anti-discrimination action:  
Develop policies to eliminate and enact legislation to outlaw discrimination on the grounds of a person's sex. ...
7. Women's rights as human rights, the elimination of violence against women, the protection of the girl child and the outlawing of all forms of trafficking in women and girls.
8. Action for women's participation in decision-making:  
As a moral and strategic imperative, ensure women's participation in decision-making processes and structures ... at all levels ...
9. Gender policy appraisal and impact assessment on macro-economic policies.
10. Action for sustainable development, poverty alleviation and eradication of absolute poverty:  
In addressing sustainable development call on the expertise of women, whose use and care of the environment is central to environmental conservation, in order to reduce poverty and safeguard natural resources. ...
11. Action for human resource development: literacy; training and education; science and technology:  
Undertake diverse and special training as well as informal and formal education programmes directed at women, including programmes to strengthen their self-esteem. Encourage gender-inclusive curricula and devote particular attention to the participation of women in training programmes leading to occupations such as science and technology, industry and commerce.