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Women in Research and Development

Centre for Women

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A monthly ECW issuance aiming at raising the gender awareness and responsiveness through highlighting the gender dimensions in various fields.

Gender Aspects of Research and Development

Since the 1970s, many Arab countries have made a concerted effort to enhance their scientific and technological capabilities. Research and development (R & D) are essential to fostering a knowledge based society and promoting development in the ESCWA region. In order for ESCWA countries to achieve scientific and technological growth it is essential to understand the potential of and improve the capabilities of women scientists and technologists. Research and development itself is not gender neutral, as advancements in science and technology affect different groups in different ways. Despite improvements in standards of living and diminution of time needed for many household duties afforded by science and technology, industrialization has been accompanied by a decline in the status of women in many ESCWA countries. It is therefore essential that R & D represent women's interests.

Any serious discussion of the impact of science and technology and R&D must acknowledge the critical importance of human capital, of educating people and increasing their technical literacy. In policy makers' efforts to raise economic productivity and ensure social and cultural sustainability, attention has to be given to the overall potential of people—and to gender as a critical factor within the context of human resources development.



Assessing Women's Role in Research and Development

In order to assess these issues, a gender study was carried out in 1996 - 1998 to evaluate women's participation in specific R & D areas and their overall contributions to national R & D capabilities: concentrating on the following: whether women have established a "strategic presence" which reflects their gendered interests and their unique approach to R&D within research and development institutions, university centres and industrial production sectors; whether women's different attainments in science education and their different needs in R&D are reflected in the science policy of national institutions; and whether women, with their different perspectives, life experiences and needs, are represented as decision makers in R&D and consequently in the national development process. The results are highly relevant today with regard not only to women's empowerment, but also the social and economic development of everyone in the ESCWA region.

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Special events in the ESCWA Centre for Women

- ▶ *ECW will be holding an EGM on the impact of wars and armed conflict on the advancement of women in the Arab region on March 13, 2007 in Abu Dhabi*
- ▶ *ECW will host the third session of the Committee on Women from 14-15 March 2007 in Abu Dhabi*

Women in Research and Development

"In the ESCWA region, women are making an increasing contribution in the fields of science and technology, including in research and development. The participation of Arab women in science and technology, however, remains limited compared to that of male scientists and women in other regions."

In the ESCWA region, women are making an increasing contribution in the fields of science and technology, including in research and development. Women scientists and engineers are concentrated in most ESCWA countries in ministry-based centres or institutions. However, women in R&D actually work within a variety of settings, including R&D institutions, university departments and industry. In terms of specializations, women scientists are distributed mainly among the disciplines and sectors of agriculture, health and nutrition, industry, environment, biotechnology, humanities and social sciences and play less of a role in energy and engineering. Within the ESCWA region, the scientific specializations and activities most preferred by women at present relate to biotechnology, information technology, certain medical specialties such as women's and children's diseases, agricultural disciplines such as food technologies, and testing and standardization.

The participation of Arab women in science and technology, however, remains limited compared to that of male scientists and women in other regions. In comparison with women scientists in other regions and countries, Arab women scientists do not fare well in terms of numbers, areas of specialization or contributions. In comparison with men, few women choose scientific careers, and the numbers of science graduates and higher-degree holders are low. Further, women's work opportunities in scientific research are limited owing to the relative lack of job opportunities in a

number of related fields. Those women who do graduate with degrees in the scientific and technological fields are often limited, in contrast to male counterparts, by their obligations to fulfill familial and household responsibilities. A relatively large number of women scientists and engineers are dispersed among the research centres and institutions in the ESCWA region; however, many find that the working environment and their household and personal responsibilities interfere with their ability to achieve particular research objectives. Female scientists and technologists are most markedly absent at the highest levels. Arab women are not represented in higher R&D policy-making bodies, except in Egypt.



The employment of women Scientists in the ESCWA Region

Progress has been slow, but there have been significant advances made in the past three decades in many Arab countries as women have been increasingly accepted into the scientific community and in academic and industrial research centres and institutions. Despite these gains, women scientists in the Arab region are often involved in only the routine aspects of research and thus tend to be more isolated and have little opportunity for contact with scientists outside the region. The scientific productivity of female scientists has tended to be lower than that of male scientists; this is thought to be a consequence of their lower status in the research institutions in which they work. The number of top women managers in scientific research is still small.



The Decision-Making Role of Women in Research and Development

In most countries of the region women scientists are not represented in R&D planning committees or on science and technology programme development boards. It is agreed that in order for women to reach that level of involvement and enhance their contribution, they must secure higher-level management positions in research institutions, participate in the selection of research topics and in the implementation of related projects and programmes, play a more active role in the research community, and ensure that they are represented in scientific councils. Women researchers currently share in the selection of research topics and the projects to be carried out; however, they have very little to say about the planning of research policies in the institutions, centres and universities where they work. They participate somewhat in programme planning for their sections, but only on a limited scale.



Barriers to Women's Advancement in Research and Development in the ESCWA Region:

Women scientists in the ESCWA region face gender barriers, including a lack of family support, self-esteem, clear gender-specific objectives and social recognition, as well as the difficulties associated with women's non-conformance with cultural norms and values. Women must carry a double (work-family) burden and have a number of traditional social responsibilities. This affects both the areas of specialization of women and their advancement in their fields. The additional years of study and dedication required to complete scientific degrees as compared to other fields may be incompatible with young women's familial and social obligations. When household responsibilities are not shared equitably between spouses, heavy family responsibilities compete with a woman's professional career. In hyper-competitive fields such as R & D this may limit a woman's performance compared to male cohorts. Furthermore, maternity leave may be particularly damaging to a scientific career, as science advances at such a rapid pace that women find it difficult to resume their scientific careers once they have been interrupted. Employers' expectations of women's household and childbearing activities may also limit women. Employers are reluctant to invest in training women for scientific careers, as they believe women are likely to leave at some point to raise a family. Women have found it difficult to break into the largely male-dominated formal and informal scientific networks that constitute the scientific community.



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Women, Policy-Making, and Managing Research and Development

The educational, social, and employment policies of ESCWA member states have a great impact on the level of participation of women in R & D in those countries. Egypt has the largest number of women scientists in higher-status jobs and at decision-making levels. This country has a longer history of education in all fields of specialization and has traditionally placed fewer restrictions on women; at a more proactive level, one of Egypt's general official policies is to encourage women's participation in all sectors of society. In Jordan and the Syrian Arab Republic, women in science and technology fields tend to be younger, with similar education and R&D experience, but they have been unable to secure higher official posts or top-level management positions. In the Gulf countries the education and employment of women is a newer phenomenon, and fewer women pursue higher studies in the scientific disciplines (in terms of both number and proportion of the total). These disparities suggest that policy can have an impact in enhancing the participation of women in R & D.



Issues for further study

Several important issues require further study

The R & D activities of Women Scientists

- While women researchers are represented in the region's scientific community, little is known about the extent of their work, their areas of concentration or their research contributions. A concentrated effort must be made to collect, compile and verify information on women's scientific contributions in the most systematic and analytical manner possible.

The Gender Specific Aspects of Science and Technology

- The issue of differential technological impact is not a subject of primary concern to women researchers in the region, and their research is not linked to improving the conditions of women. These women scientists need to look more closely at the conditions of science and technology transfer and adaptation and determine how they can play an active role in promoting issues to be researched by women and for their benefit.

Matrix: Women in Research and Development

Barriers to Women's Advancement in R & D	Possible Steps for removing these and Other Obstacles
Women are forced to combine heavy family responsibilities with professional careers when household responsibilities are not equitably shared between spouses	The establishment of alternative work arrangements such as flexible hours, flexible locations and job-sharing, and the provision of on-site child-care facilities
Women have found it difficult to break into the largely male-dominated formal and informal scientific networks that constitute the scientific community	The adoption of maternity and paternity leave policies. Hiring and promotion criteria and processes must take into account family responsibilities and ensure that such family leaves do not jeopardize career progress
Science advances at such a rapid pace that women find it difficult to resume their scientific careers once they have been interrupted	Obtaining a commitment from government policy makers and managers of private sector research units to facilitate the hiring, promotion and career development of women in science and technology fields, adhering strictly to the merit principle
Employers are reluctant to invest in training women for scientific careers, as they believe women are likely to leave at some point to raise a family	Enforcing policies against discrimination and harassment in the workplace
	Issuing pay equity legislation and directives for the collection of gender-desegregated statistics; establishing focal points for the provision of advice on gender issues in connection with science and technology; and increasing the number of women appointed to policy-advisory and decision-making bodies
	Establishing networks of female professionals involved in science and engineering fields; creating/enhancing mentoring, role-model and career advisory programmes; providing flexible tenure criteria to accommodate family roles and responsibilities; and providing refresher courses and re-entry scholarships for women returning to careers in science

We're on the Web!

See us at:

www.escwa.org.lb

About Our Organization...

The ESCWA Centre for Women was established on October 1, 2003, following the Commission's adoption of Resolution 240(XXII). This resolution, recognizing that a fundamental part of development is the empowerment of women, called for the creation of a Committee on Women comprising the member countries, and for the establishment of a women's Centre at ESCWA. The Centre continues and expands on the work carried out by the Women Empowerment and Gender Mainstreaming Team, formerly a part of the Social Development Division at ESCWA.

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