EURO-MEDITERRANEAN RESEARCH COOPERATION ON GENDER AND SCIENCE

NATIONAL REPORT: JORDAN

University of Jordan – Royal Scientific Society

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Prof. Dr. Amal El Kharouf – University of Jordan
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INTRODUCTION

This report aims to highlight some of the findings on gender imbalance in women’s careers in the academic and professional spheres in Jordan as part of a joint research project undertaken by the Center for Women’s Studies (CWS) at the University of Jordan and The Royal Scientific Society (RSS) in partnership with other Arab and European institutions within the SHEMERA project. The overall objective of the SHEMERA project is enhancing research cooperation on gender and science between the European Union and the Mediterranean countries. Research cooperation is intended for a better understanding of the roots of gender inequality in science in the Mediterranean area, by taking into account the cultural diversities and traditions, and analysing how the Mediterranean countries are addressing this specific issue.

The research project aims to produce national data in Mediterranean Arab countries (Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Syria, and Tunisia) that can form the basis for a comparative analysis on the current situation, with the objective of benchmarking future development in this area against a baseline that can guide researchers, policy makers, and strategists to areas that need to be addressed.

The research focuses on three key themes to underpin the current situation of women in science in each country at the national level:

1. Compiling sex-disaggregated statistics covering women and men’s distribution in scientific fields and careers, seniority and influence;
2. Collating scientific literature on gender inequalities in science careers with a focus on horizontal and vertical segregation and the underlying causes and effects of these two aspects;
3. Reviewing available gender equality policies, legislations, national strategies and positive actions for women including equal opportunities legislations.

There is an imbalance in the number, seniority and influence of women and men in scientific fields and professions worldwide. The roots of gender imbalance lie deep within each society, each profession and each institution. Gender imbalance is not a self-correcting phenomenon and only concrete measures targeting specific aspects of its manifestations can lead to any significant change in this area.

The following sections discuss the statistics pertaining to women and men’s distribution in scientific fields, seniority and influence, and the gender equality policies. The report concludes with recommendations.

1. STATISTICS ON WOMEN IN SCIENCE

Methodological and data issues

Main data sources:
• Department of Statistics (DoS)
• Ministry of Higher Education (MOHE)
• Higher Council for Science and Technology
• Scientific Research Fund 2012

The main gaps in the data collection for Jordan concern researchers. In the absence of an R&D survey, there is no detailed information on researchers. The DoS could collect these data as they have a database that covers all (private and public) companies but they would need funding to carry out this exercise.
Available data, whether from governmental sources or others, do not allow for a detailed and
gendered analysis of the employment situation of researchers in different sectors and specific age groups. There are no detailed data to assess men and women’s presence in specific specializations within scientific disciplines.

The national expert has however managed to collect the numbers of female and male researchers by broad field of science in the higher education sector for 2004 and 2010. There is no information available on the gender pay gap in science and research.

Data on women’s access to research opportunities and research training and funding are also insufficient.

Finally, all data relative to public spending on R&D and research funding (number of applicants and recipients) are missing.

Data on higher education students and graduates and on academic personnel are available. In the Jordanian data ISCED 5 students and graduates cover only bachelor students and graduates. ISCED 6 students and graduates in Jordan include PhD students and graduates in line with the broad ISCED 1997 classification for higher education established by UNESCO. It is difficult to refine these numbers because the Jordanian data reflect only the broad classification of higher education students and personnel. As regards academic personnel, instead of the usual 4 grades, Jordan applies 6 grades:

- Grade A: Full professor
- Grade B: Associate professor
- Grade C: Assistant professor
- Grade D: Instructor
- Grade E: Lecturer
- Grade F: Teaching and research fellows

Although grade A personnel can be broken down by field of science there is no information available on the age of grade A staff.

Female underrepresentation in decision-making in science and research can be studied through two indicators: the share of female heads of universities and the proportion of women on scientific and research boards.

Data on the sex composition of boards cover:

- The Boards of Trustees of all private and public universities in Jordan
- The University Councils of all private and public universities in Jordan
- The Councils of Deans all private and public universities in Jordan
- The Councils for Appointment and Promotion all private and public universities in Jordan

Introduction

In Jordan, the male employment rate (aged 15+) stood at 63.5% and the female rate at 14.7% in 2010 (DoS data). The employment rates reported by the national expert are just slightly higher than those reported in the World Development Indicators series published by the World Bank according to which in 2010 the male employment rate (men aged 15+) stood at 60.9% (59.4% in 2012) compared with a much lower female rate (women aged 15+) of just 12.1% (also in 2012).

In 2010, the gender pay gap stood at 14% in Jordan.

Jordan has 26 universities and 42 higher education colleges (offering 2-year curricula). In 2010, there were 24,5237 students enrolled in the 26 universities and 29,414 students in the 42 colleges. The three biggest universities are the University of Jordan, Yarmouk University and Al-Balqa’ Applied University. These three universities host 41% of all university students.
The Jordanian Scientific Research Fund designated an amount of 0.55% of Gross Domestic Product to R&D in 2010.

**The presence of women in science**

Women form a minority among people who have successfully completed tertiary education in a Science & Technology (S&T) field of study and who are also occupied in such a field. These fields are natural sciences, engineering and technology, medical sciences, agricultural sciences, social sciences, humanities, and others. In 2004, women represented 13.8% of this population (compared with 75% of men) and 15.6% in 2010 (compared with 77.7% of men).

The population of researchers in Jordan’s higher education sector remains very male-dominated. In 2004, the share of women among researchers aged 25-70 stood at 16%. By 2010, it increased to 22%. There are no data on researchers in the government or private sector.

**Scientific fields or horizontal segregation**

In Jordan, 35% of PhD graduates were women in 2010 compared with just 20% in 2004. There thus seems to have been made important progress towards a better gender balance at the PhD level.

In 2010, these women were distributed across the different fields of science as shown by graph 1. Women form an absolute minority of PhD graduates in 4 fields of science. In Humanities and arts, the proportion of female PhDs is lowest at 25%. In the social sciences, women represent 27% of PhD graduates. Their share is above 40% in education (43%) and science, mathematics and computing (44%). What is more remarkable is that in Jordan female PhDs outnumber male PhDs in engineering, manufacturing and construction which is usually a very male-dominated field of science, in Europe and in the Arab Mediterranean countries. Women represent 67% of all PhD graduates in this field in Jordan. However, this result is entirely due to small sample sizes. Indeed, in 2010, there were just 3 PhD graduates in engineering, manufacturing and construction of which 2 were women. Very small absolute numbers of PhD graduates also characterise the fields of agriculture (7 PhDs of which 5 were women) and health and welfare (2 PhDs, both women). In agriculture, the share of women is thus very high at 71% and given that both PhD graduates in health and welfare were women in 2010, the field is completely feminized.

**Graph 1: Proportion of female PhD graduates in the different fields of science, 2010**

![Graph showing the proportion of female PhD graduates in different fields of science](source: National expert)

When we look at how the population of researchers (aged 25-70) is distributed across fields of science in the higher education sector in 2010 (graph 2), we see that large shares of female researchers in Jordan are in the humanities and the medical sciences: 38% and 31% respectively. Only 13% of male researchers are in the medical sciences. The largest shares of male researchers are in engineering and technology (30%) and the humanities (28%). Only 14% of female researchers are in engineering and technology. The fields characterized by the
largest gender gap are thus the medical sciences and engineering and technology. A large gender gap can also be observed in the natural sciences that host 9% of all female researchers compared with 15% of male researchers. The social sciences attract only small shares of researchers: 5% of women and 7% of men. The same holds true for agricultural sciences, which attract 3% of female and 6% of male researchers.

Graph 2: Distribution of researchers in the Higher Education Sector (HES) across fields of science, 2010

![Graph showing distribution of researchers across fields of science]

Source: National expert

The female research population in higher education has been growing fast in all fields of science in Jordan between 2004 and 2010. The compound annual growth rate between 2004 and 2010 of the number of female researchers (aged 25-70) has been largest in the field of engineering and technology where there is nevertheless still a very large gender imbalance in the research population. In this field, the number of female researchers has grown at an annual rate of 22%. Growth rates of 11-12% were observed in the humanities and the agricultural sciences (which in 2010 still host just 3-6% of female and male researchers). The number of female researchers has grown at a rate of 8% on average per year in the natural and the medical sciences and at a rate of 7% in the social sciences.

Table 1: Compound annual growth rates of female researchers (aged 25-70) in the Higher Education Sector (HES) by field of science, 2004-2010

<table>
<thead>
<tr>
<th>Field of Science</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural sciences</td>
<td>8</td>
</tr>
<tr>
<td>Engineering and technology</td>
<td>22</td>
</tr>
<tr>
<td>Medical sciences</td>
<td>8</td>
</tr>
<tr>
<td>Agricultural Sciences</td>
<td>11</td>
</tr>
<tr>
<td>Social sciences</td>
<td>7</td>
</tr>
<tr>
<td>Humanities</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: National expert

To conclude, the dissimilarity index in the higher education sector stood at 0.27 in 2010 in Jordan which is very high. The distribution of male and female researchers across fields of science is very unbalanced.
Seniority or vertical segregation

Recall that in the Jordanian data, ISCED 5 students and graduates cover only bachelor students and graduates. ISCED 6 students and graduates represent the PhD level.

The scissors diagram in graph 3 shows that in 2010, 51% of ISCED 5A students and 55% of ISCED 5A graduates were women. The share of women among ISCED 5A graduates increased between 2004 and 2010. At the next level, the PhD level, women fall back to a minority position. In 2010, there were 31% of women among PhD students and 35% of women among PhD graduates. At the earliest steps into the academic career women nevertheless tend to be well represented in Jordan, they are 53% or a majority among teaching and research fellows (grade F) after which their share drops slightly below 50%. At grade E or among lecturers there were still 47% of women and at grade D or among instructors 46% of women in 2010. In Jordan, it is at this point that the scissors start to open very rapidly. The glass ceiling seems to be located between grades D and C. Between grade D and grade C, the share of women drops back from 46% to 18%. It thus seems to be particularly difficult for female instructors (grade D) to be promoted to assistant professors (grade C). The share of women at grade B or that of associate professors is lower still at 8%. And at the highest level of the academic career, at grade A or among full professors, there remains a share of just 6% of women.

A comparison between 2004 and 2010 shows that the proportion of women has increased at the level of PhD graduates and at the lowest academic grades but that no progress has been made at the highest grades of assistant, associate and full professors.

The glass ceiling is thus very strong in Jordan. This is also illustrated by the high and increasing value of the glass ceiling index, 3.8 in 2010 and 3.2 in 2004. It should be noted that compared with the total of academic staff, grade A staff represent only a very small share, at least for women: female grade A staff represent 4% of all female academics compared with 19% of all male academics to have reached this highest grade.

Graph 3: Proportions of men and women in a typical academic career, students and academic staff, 2004/2010

The scissors diagram is somewhat different in the specific field of science and engineering as depicted by graph 4. Up until grade C, the proportion of women remains very close to 40% whereas when all science fields were taken together we had proportions of women around 50% until grade C, with the exception of the PhD level. The point at which the scissors open is the same as in the general diagram. In science and engineering, the glass ceiling also seems to be located between grades D and C. However, the attrition of women at this level is even more pronounced in science and engineering than in the general scenario. In this particular field the share of women drops from 45% among instructors to just 8% among assistant professors. Above this level, there are almost no women left, they constitute 3% of associate professors and 5% of full professors. A comparison between 2004 and 2010 shows that the situation has
been completely stable in the student population and at grade A and that nothing has changed at the level of assistant, associate and full professors either. Progress towards a more balanced gender composition of academic staff was realized at grades E and D where the share of women has almost doubled between 2004 and 2010.

**Graph 4: Proportions of men and women in a typical academic career in science and engineering, students and academic staff, 2004/2010**

![Graph 4: Proportions of men and women in a typical academic career in science and engineering, students and academic staff, 2004/2010](image)

Source: National expert

Female grade A academic staff in Jordan are best represented in the medical sciences where 16% of all grade A academics are women. The medical sciences are followed by the natural sciences where there are 7% of women among grade A academics. In all other fields the share of female grade A staff is very low at around 2-3% only.

**Graph 5: Proportion of female grade A staff by main field of science, 2010**

![Graph 5: Proportion of female grade A staff by main field of science, 2010](image)

Source: National expert

To conclude this section, recall that the gender pay gap in the total economy stood at 14% in 2010. The gender pay gap in research can be approximated by selecting three broad occupational categories from the ISCO ’88 classification: that of Legislators, senior officials and managers (ISCO’88 code 100), that of Professionals (ISCO’88 code 200) and that of Technicians and associate professionals (ISCO’88 code 300). In these occupational groups in the private sector the gender pay gap stood at 9.3% in 2010 down from 12.9% in 2004. The gender pay gap thus appears to be smaller in private sector research than in the total economy.

**Access to decision-making in science**

Of the 26 Jordanian universities, just one had a female president in 2010. Of a total of 1,254 board members in 2010, just 8.6% were women. Data are available on beneficiaries of research
funding by field of science. However, there is no information on the number of applicants so that the data on beneficiaries should be interpreted with caution. The data on research funding beneficiaries cover 8 of the 26 Jordanian (public and private) universities. In 2004, 14% of all research beneficiaries were women and this proportion increased to 16% in 2010. The share of female beneficiaries is highest in the medical sciences at 42%. In the humanities and the social sciences 12-15% of all research funding beneficiaries were women in 2010. Finally, in all other scientific fields (the natural sciences, agricultural science and engineering and technology) women represented just 7% of all research funding beneficiaries.

2. GENDER EQUALITY POLICIES

2.1 POLICY CONTEXT

Legislative framework

The Jordanian constitution ensures equality in its article 6: “Jordanians shall be equal before the law. There shall be no discrimination between them as regards to their rights and duties on grounds of race, language or religion”. However, it does not explicitly state prohibition of discrimination on the basis of gender.

Jordan ratified CEDAW in 1992 with some reservations, having amended some of its laws to bring them into line with the convention. In 2009, Jordan decided to withdraw reservation to article 15 (4) (freedom to choose domicile). It maintains reservations to article 9 (2) (equal rights with regard to nationality of children), to article 16 paragraph 1 (c) (same rights and responsibilities during marriage and at its dissolution), (d) (same rights and responsibilities as parents) and (g) (same personal rights, including the right to choose a family name, a profession and an occupation). Jordan maintains its reservations to article 16 (1) (c) (d) and (g) because these are not compatible with Shari'a provisions.

The CEDAW committee has indicated that reservations to article 16 are incompatible with the Convention and has recommended intensifying efforts in discussing this with religious communities, based on practices of other states in the region and “the Organization of Islamic Cooperation (OIC) who found that article 16 is compatible with sharia law”. Other major concerns expressed by the Committee are: the prohibition of discrimination on the basis of gender was not incorporated in article 6 of amended Constitution in 2011; the absence of the prohibition and definition of gender discrimination in national legislation in accordance with article 1 of the Convention; the persistence of discriminatory provisions in various domestic laws, including the Penal Code, Personal Status Act, Labour Code and Nationality Act.

Institutions and policies

The Jordanian National Commission for Women (JNCW) was established in 1992. Its mission is to support mainstreaming of a gender equality perspective in all policy areas and to narrow the gap between formal acknowledgements of women's rights as detailed by legislation and actual societal attitudes towards women through improving the status of women and enhancing their role in national development; increasing and encouraging the participation of women in economy, politics, and decision making; and strengthening women's legal status.

The framework for gender equality policies in Jordan is the 2013-2017 National Strategy for Women, prepared by the JNWC. It seeks to empower women socially, legally, politically and economically.

In the field of education, the Strategy establishes among others the goals of raising the quality and inclusiveness of the education system, as well as raising female enrolment in higher education programmes and specialities in which women are under-represented.

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1 Committee on the Elimination of Discrimination against Women, Fifty-first session, 13 February – 2 March 2012 (CEDAW/C/JOR/CO/5)
In the field of employment, the National Employment Strategy (2011-2020) aims at increasing rates of female participation in the labour market by expanding opportunities to enter the workforce through eliminating obstacles, providing a flexible and suitable working environment and reducing unequal pay for work of equal value. In addition, the strategy deals with policies aimed at reducing structural unemployment for both men and women and provide social protection and inclusion. The objective is to ensure that all workers of the public and private sectors benefit from social protection in terms of retirement, work injuries, health insurance, unemployment benefits and maternity benefits, as granted by labour laws and regulations.

The government has established Gender Units in most of the Ministries in order to mainstream gender into strategic plans and policies. The most relevant initiatives are the gender policy of the Ministry of Planning and International Cooperation in the fields of poverty, unemployment, and empowerment, and the National Climate Change Policy of Jordan 2013-2020.

In addition, Jordan has been implementing affirmative action in order to promote women’s participation in political life since the early 2000s. In 2003, the Electoral Law provided the allocation of 6 seats to women in the House of Representatives. The number of women’s seats was subsequently raised to 12 in 2010 and 15 in 2012. As regards municipal elections, the law established a minimum of 20% seats for women in 2007, which has been recently raised to 25%. From 1990 to 2013, there has been a substantial increase in the number of women elected in the Parliament: The share of women in the Senate has increased from 2.5% in 1990 to 13% in 2013 and from 0% to 12% in the House of Representatives. The same holds true for Municipal Councils, with 0.5% of which were women in 1995 and 24.8% in 2013. The presence of women in the government at Ministerial level shows also an increasing trend, from a share below 5% in 1990-2000 to 12.3% in 2013.

A quota measure was also adopted in the Judicial Institute Regulations of 2007 ensuring that 15% of accepted applicants are women.

2.2 GENDER EQUALITY POLICIES IN SCIENCE

Structures for gender equality in science

In Jordan there is no high-governmental level structure in charge of gender issues in scientific research. There is no gender unit at the Ministry of Higher Education and Research, although there are gender units in most ministries.

Statistics and indicators

Sex-disaggregated statistics are regularly published by the JNCW, the Department of Statistics and ministries.

The National Employment Strategy (2011-2020) proposed a set of indicators for measuring progress as regards women’s employment, including: percentage of women’s participation in the labour force; number of beneficiaries of maternity insurance; number of professional licenses issued to women working at home; number of female beneficiaries of training programmes at workplaces funded by the government; and number of women enrolled in social security.

Sex-disaggregated statistics in the field of science are very incomplete. There is no R&D survey in the country.

Gender balance measures

There is no specific regulation aimed at fostering a gender balance on public committees, except quotas applied in elections and the judiciary.
There is no official engagement on gender balance in scientific decision-making bodies or committees. There is no measure in place to implement quotas or targets in universities or research institutions.

**Equality plans and related gender equality measures**

Universities and research institutions are not required to set up gender equality plans or related gender equality measures such as gender units or gender observatories.

**Work and family balance**

Maternity leave in Jordan is 10 weeks with full pay, of which 6 weeks at least have to be taken after childbirth. Breastfeeding leave is one hour per day with full pay within a year of the date of delivery. The law also establishes that employers with a minimum of 20 female married employees should provide qualified childcare for employees’ children aged 0-3 years, provided that there are at least ten children.

For civil servants, maternity leave is extended to 90 days.

There is no paternity leave in Jordan, although several NGOs are working to introduce such leave. The National Council for Family Affairs (NCFA) recently introduced a three-day paternity leave for its male employees. The decision is in line with the NCFA’s role to lead by example in bettering the conditions of Jordanian families.

There is no special scheme for scientists and researchers. Specific resources for supporting returnees after career breaks in science are absent.

**Mentoring**

Mentoring is not an institutionalised practice as regards junior scientists of either sex.

The first mentoring programme for women in academia launched the pilot phase in November 2013 under the auspices of the Jordan TEMPUS office and the Hashemite University.

**Funding**

Research funding is awarded on the basis of merit, without any gender-related provision to ensure equal access to funding. There are no special funds or prizes for women.

**Women’s and gender studies**

There are several specialised women's research centres in Jordanian universities, namely the Centre for Women's Studies at the University of Jordan and the Princess Basma Centre for Jordanian Women's Studies at Yarmouk University.

The Centre for Women's Studies at the University of Jordan offers a master degree in Women's Studies. Courses on gender-based violence are offered at the University of Jordan as well as two other Universities.

Gender mainstreaming in knowledge production is being promoted although indirectly by the development of gender mainstreaming in strategic policy areas. It is namely the case of the National Climate Change Policy (2013-2020).

**Networking**

There are no women in science associations in Jordan.
3. RECOMMENDATIONS

In cooperation with the Royal Scientific Society, the Center for Women’s Studies in the University of Jordan held the national workshop on gender and science on May 7th 2014. In this workshop, focus groups were organised in order to share ideas and debate on the methods of reinforcing the production of research pertaining to women and science, and on how to find policies that are based on research results to increase the number of women working on research and the quality of their research as well. Following the discussion that took place between the members of each group consisting of elite specialists in scientific research, the following recommendations were approved by all participants:

1. Promoting gender-sensitive budgets in all fields and institutions.
2. Reinforcing statistics pertaining to scientific research as gender-sensitive, and preparing a scientific research database that considers gender.
3. Motivating and supporting distinguished females on different educational levels.
4. Reinforcing the obligation of teaching methods of scientific research in all academic fields.
5. Representing females when granting funds for scientific research projects.
6. Reviewing and modifying legislations pertaining to scientific research to achieve justice from a gender perspective.
7. Realizing the importance of qualifications when appointing people in high leading positions and linking qualification to research achievements, not to years of experience only.
8. Strengthening women’s economic status as well as their participation in the labour market through reviewing economic legislations, especially the social security law and the labour law to legally frame the definition of partial work, in addition to providing services that would support women’s work.
9. Modifying the university admission policies by raising the admission percentage of outstanding female students in the fields of social and human sciences.
10. Raising the percentage allocated for supporting scientific research pertaining to women.
11. Allocating academic scholarships for outstanding females in all fields.
12. Working on allocating departments for gender integration in all institutions in addition to following up and evaluating their work.
13. Encouraging the publication of academic journals in the field of gender and women’s studies.
14. Policies to support women’s careers by including a flexible working environment.
15. Working on supporting and developing a knowledge base for both men and women, and involving men in the development process.
16. Organizing an annual event to honour distinguished women in all fields.
17. There should be an emphasis on data collection that presents the funded research by gender and research subjects for academic personnel and government researchers.
18. Future research is needed to promote the advancement of women’s empowerment in scientific careers and leadership.
19. Improving women scientists’ networking and promote role models and mentoring programs. Moreover, social media should be used to promote gender related issues and improve public awareness of gender imbalance in scientific research.
20. Directing female students towards the scientific field, and encouraging females to pursue their carriers in science fields and/or proceed to post graduate studies.
This report aims to highlight some of the findings on gender imbalance in scientific careers in academic and non-academic sectors in Jordan that have evolved from a joint research project undertaken by the Center for Women's Studies at the University of Jordan and the Royal Scientific Society in collaboration with other Arab and European institutions within the SHEMERA project. The overall objective of the SHEMERA project is enhancing research cooperation on gender and science between the European Union and the Arab Mediterranean countries: Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Syria and Tunisia. Research cooperation is intended to improve the understanding of the roots of gender inequality in science in the area, by taking into account cultural diversities and traditions, and analysing how the Arab Mediterranean countries are addressing this specific issue.

The research project aimed to collect national data in the Arab Mediterranean countries to form the basis for a comparative analysis of the current situation of gender equality in science in order to benchmark future development in this field and guide researchers, policy makers and other strategic players in identifying and addressing the key problem areas.

This report focuses on two key domains to map the situation of women in science in Jordan:

- The compilation of sex-disaggregated statistics covering women’s and men’s distribution across scientific fields and careers, their seniority and participation in decision-making in science;
- The description of gender equality policies, legislations, national strategies and positive actions for women including equal opportunities legislation – with a special focus on gender equality policies and initiatives in the field of science.

There is an imbalance in the representation, seniority and participation of women and men in scientific fields and professions worldwide. The roots of this gender imbalance are deeply embedded in each society, profession and institution. Gender imbalance is not a self-correcting phenomenon and only concrete measures targeting specific aspects of its manifestations can lead to significant change in this area. The final section of this report provides a set of national recommendations to strengthen the position of women in science and promote gender equality in this field.