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**Women's and Girls' Participation**  
**in Science and Technology in North Africa**

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**Introduction**

The Arab Human Development Report for 2002 has shown that the Arab world faces three key deficits; these are the gaps in knowledge of and control over new technologies, the gap in freedom and democracy, and that of women's empowerment. For achieving sustainable human development these gaps must be addressed. Education for all children and young people is one of the most important tools to realize these objectives.

In the sub-region North Africa, the Maghreb countries have made excellent progress in building their human capital base. After 40 years of investments in education that have closed the gender gap at the primary school level and resulted in nearly universal education, the region faces new challenges posed by globalization and the increasing importance of knowledge in the development process.

The region has not made the best use of its accumulated human capital. Unemployment is particularly high among graduates. The education systems in the region are not yet fully equipped to produce graduates with the skills and expertise necessary to compete in a world where knowledge is essential to making progress. They still need to achieve a better match between the supply of skills and the demand of their national and regional labour markets. This endeavour requires the overhaul of technical and vocational education and of their

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\* The views expressed in this paper are those of the author and do not necessarily represent those of the United Nations.

training systems as well as the modernization of the Maghreb universities to raise them to European standards of quality and governance.

The main challenges facing these countries are to expand the coverage of quality education at all levels, and to go beyond creating a mass education system for all to a modern education system capable of coping with increased globalization and technological innovations worldwide.

## **I) Educational achievements in North Africa region**

North African countries have made a strong effort to expand and improve their education systems. They have committed about 20 per cent of government expenditures to finance this goal. As a result, significant advances have taken place in improving indicators such as life expectancy, child mortality, and school enrollment for both men and women.

### **1) Primary education:**

Algeria and Tunisia have already achieved universal primary completion, while Morocco requires more efforts to accomplish this goal by 2015. The crowning achievement for the Maghreb region has been the closing of the education gender gap. Gender parity for basic education is almost complete. The gender parity index (GPI) of the gross enrollment ratio (GER) in 2005 was 0.97 in Tunisia, 0.94 in Algeria and 0.90 in Morocco.

**Table 1: Data on primary education in North African countries (2005)**

Algeria	Tunisia	Morocco
<b>95%</b> of girls and <b>98%</b> of boys are in primary school	<b>98%</b> of girls and <b>97%</b> of boys are in primary school	<b>85%</b> of girls and <b>90%</b> of boys are in primary school
<b>96%</b> of children complete a full course of primary	<b>99%</b> of children complete a full course of primary	<b>80%</b> of children complete a full course of primary
<b>16.7%</b> of government spending goes to education	<b>20.8%</b> of government spending goes to education	<b>27.2%</b> of government spending goes to education
Girls represent <b>47%</b> of the enrolled pupils	Girls represent <b>47.7%</b> of the enrolled pupils	Girls represent <b>46.4%</b> of the enrolled pupils
There is one teacher per <b>25</b> pupils	There is one teacher per <b>20</b> pupils	There is one teacher per <b>27.1</b> pupils

### **2) Secondary and higher education:**

Similar progress has been made with respect to the proportion of the age cohort attending secondary school and university. The region was able to increase enrollment at the secondary school level by almost threefold between 1970 and 2003; the number was approximately fivefold at the level of higher education.

The number of enrolments grew faster than the often considerable growth of the school-age population, and more girls than boys benefit from these changes. As a result, gender parity at secondary level is almost reached, and girls outnumbered boys in Algeria and Tunisia.

**Table 2:** Data on secondary and higher education in North Africa countries

	Algeria			Tunisia			Morocco		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Secondary gross enrollment ratio (%) (7 years)	83	80	86	85	81	89	56	60	51
Lower secondary (%) (4 years)	108	111	105	113	114	113	74	81	68
Upper secondary (%) (3 years)	58	50	68	70	63	77	38	40	36
Vocational and technical (% of secondary enrolment)	12.4	0.2	0.1	9.1	0.1	0.1	6.0	0.1	0.1
Secondary gender parity index (GER ratio)	1.08			1.10			0.86		
Tertiary gross enrollment ratio (%)	24	20.1	28.1	30.8	24.7	37.2	11.3	12.0	10.7
Tertiary graduates in science (% of total graduates)	12.1						15.2		

**Sources:** The United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS), the World Bank, the Joint United Nations Programme on HIV/AIDS (UNAIDS), the International Labour Organization (ILO), household surveys, the International Monetary Fund (IMF), and country data. Data are for the most recent year available in 2000-2005.

Despite this impressive progress, the average level of education among the population is still lower in the Middle East and North Africa (MENA) than in comparable regions. Admittedly, the region started from a lower base than countries in East Asia and Latin America. But the fact remains that the average gross enrollment rate in secondary schools in MENA in 2003 was 75 per cent, compared to 78 and 90 per cent for East Asia and Latin America, respectively. Similarly, the average gross enrollment rate in higher education in MENA was only 26 per cent in 2003, which is about two-thirds of the average for the other two regions. These differences indicate that the level of human capital in MENA is still relatively low.

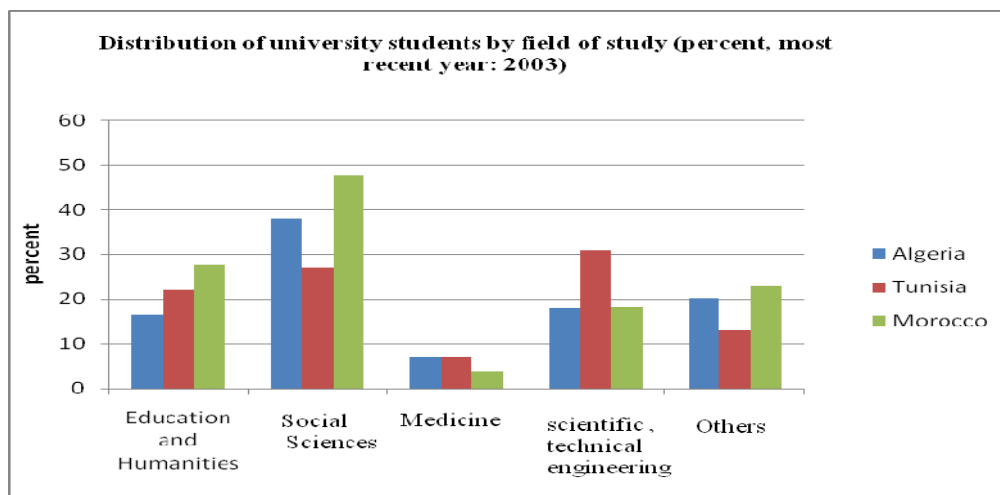
### 3) Science and technology

“In more than half of the MENA countries, approximately two-thirds of the students major in the fields of social science and humanities rather than in science and mathematics. Given that technological innovation and adaptation is increasingly playing a prominent role in the development process, MENA schools may be producing the wrong mix of competencies”.<sup>1</sup> As shown in Table 3, a disproportionate number of Maghreb students study humanities-related fields, while their competitor countries are excelling in math and sciences, disciplines which are linked with technological advancement. North African countries need to overhaul their education systems to promote science and technology (S&T).

**Table 3:** Distribution of university students by field of study (per cent, most recent year: 2003)

	Education and humanities	Social sciences	Medicine	Scientific, technical and engineering	Others
Algeria	16.4	38.2	7.1	18.0	20.2
Tunisia	22.0	27.0	7.0	31.0	13
Morocco	27.6	47.8	3.9	18.3	23

<sup>1</sup> World Bank (2008). *The Road Not Traveled*, Washington D.C.



Source: UNESCO Institute for statistics, Data centre (accessed in June 2006).

### Situation in Tunisia

In the last decade, Tunisia has made strong efforts to change its educational system to increase the student ratio in science and technology fields at secondary and tertiary levels. A remarkable progress has been achieved for both boys and girls. Statistics published by the Tunisian ministry of education in 2008 shows that 62 per cent of students at the upper secondary level pursue science, technical and computing studies. In Tunisia, secondary level students have to choose between four fields: human science, science, computing technologies, economy and services. The percentage of students by field of study is summarized in Table 4.

**Table 4:** Percentage of students by field of study by sex

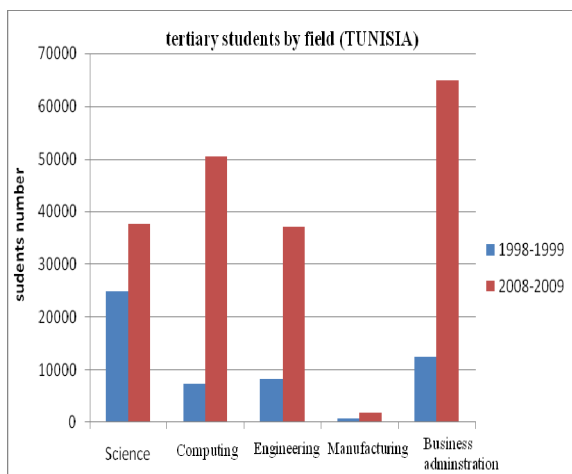
	Total	Male	Female
Human science,	18.8	27.2	72.8
Science (total):	46	44	56
* Experimental science			71.3
* Mathematics			51.3
* Technical science			23.2
Computing technologies	16.3	59.3	40.7
Economy and services	18	40.7	59.3

Source: The Tunisian Ministry of Higher Education and Scientific Research (2008)

Data for higher education (Table 5) show an important increase, in the last decade, in the number of students in science, computing, engineering, manufacturing, and business and administration, with a high participation rate for girls.

**Table 5:** Number of tertiary students by field

	1998-1999	2008-2009	% girls in 2008
Science	24886	37657	58.4
Computing	7498	50491	48
Engineering	8418	37078	32
Manufacturing	647	2068	40
Business and administration	12542	64935	60



### Gender differences among tertiary graduates by field of study

In 2008, the total number of students at university was 360,000 with 58 per cent of girls. The proportion of women university graduates was about 60 per cent which demonstrates that they are more successful students as well. Girls and young women have outnumbered and outperformed boys. 36.8 per cent of university graduates were in science, engineering and computing.

**Table 6:** The percentage of women graduates by field (year: 2008)

	% women
Social sciences	82
Health	72.6
Administration	70.2
Journalism and information	75.8
Law	68.1
Life sciences	77.6
Mathematics	42.8
Physical science	51.2
Engineering	30.4
Computing	49.7

Source: The Tunisian Ministry of Higher Education and Scientific Research (2008)

As shown in Table 6, three quarters of Tunisian women graduate are in the field of social sciences, life sciences and journalism. A similar pattern is found in the field of health, administration and law, with women representing almost two out of three graduates in these fields. There is a gender balance in physical science with 51 per cent of female graduates and in computing with 50.3 per cent of male graduates. Men outnumber women in mathematics and engineering.

### From tertiary education to a career in research

**Table 7:** Percentage of men and women graduates in tertiary education by program level:

	% graduates	% women
Master's degree	91.1	62.1
Ph.D degree(doctorate)	1.2	37.9

The percentage for master's degrees includes all higher education graduates (technical degrees, two year professional degrees, bachelor, master and engineer diploma), except PhD degrees. Women outnumber men significantly among master's degree graduates but the pattern does not persist at the Ph.D. level.

In research structures of institutes and universities, the percentage of female researchers is 30-45 per cent. As this percentage covers all research fields, there is a need for more detailed data on women's participation in particular subfields of science and technology.

## **II) Employment**

### **1) Economic growth and employment growth**

“The rapid growth in the population and labour-force participation in the MENA region was not associated with sufficient job-creating growth to absorb the increase in the supply of labour. Thus, a combination of high population growth and increased participation of women in the wage-labour force, together with insufficient job creation, resulted in higher unemployment, especially in Algeria, Morocco, Syrian Arab Republic, Jordan, and Tunisia.”

A World Bank report, entitled “The Road Not Traveled” (published February 2008), highlights what must be done to overcome the present macro-problems: low adult literacy, high dropout rates, relatively low scores on international tests, and a disconnect between the region's education system and labour markets. As a consequence of the last deficit, the MENA region is experiencing a weak link between education and economic growth, income distribution and poverty reduction.

### **2) Characteristics of the labour market in North Africa**

The labour force is heavily male-dominated because of the low participation rate of females. The rate of activity (ratio of the working population to those classified as being of working age) varies by age, gender and place of residence. According to the 2004 general population census, the rate was 45.8 per cent, down from its 1994 level (48.4 per cent). This regression has been evident since the mid-1980s in response to increased enrollment in secondary and especially higher education. In addition to entering the labour market later and later, the workforce is also characterized by an increased level of education. In 1975, only 14.2 per cent of the population had completed secondary schooling, whereas in 2004, nearly half (or 47.2 per cent) had completed secondary school or graduated from university. Obviously both factors are related: greater enrollment numbers and longer study times account for the delayed entry into the labour market.

Unemployment rate for the working-age population (15-64 years) is about 15 per cent, making it among the highest in the world. Unemployment essentially concerns the youth and is linked more to the problem of insertion into the labour market (World Bank, 2004). In 2004, the unemployment rate for ages below 30 years old was approximately 25 per cent. This situation is typical of countries where the education and training system is not properly linked to the economic environment. Indeed, graduates, misinformed about the country's working conditions and requirements, have educational profiles that are inconsistent with reality, a fact which makes their first attempt to enter the labour market difficult.

### 3) Women's participation in the labour market:

In North Africa, the conditions for the integration of women into the economy exist: education and a non-discriminatory legal framework are the starting point. North Africa has witnessed a rising trend in women's activity rate, especially since 1990. More and more women are now entering the labour market. In 2000, on average one woman out of four was employed.

**Table 8:** Women's activity rate, North Africa, 1980-2000 (%)

	1980	2000
Algeria	11	20
Tunisia	19	26
Morocco	24	27

The rise in women's activity rate appears to be the combined effect of recent events which seem to have favoured it, in particular:

- Women's access to education<sup>2</sup> and to professional training<sup>3</sup>
- The growing proportion of young women in the population structure and hence in the active population
- The decline in fertility and the rise in the age of marriage
- The expansion of the service sector<sup>4</sup>
- The expansion of manufacturing industries relying on female labour in some countries<sup>5</sup>
- The fall in real income and the escalating levels of poverty, in particular because of falling oil revenue<sup>6</sup>
- High unemployment among men<sup>7</sup>
- The weakening of traditional channels of solidarity<sup>8</sup>
- The growing flexibility of the labour market, which therefore attracts more women<sup>9</sup>

Despite the rising trend in women's activity rate in the sub region, the literature is unanimous in emphasizing that despite this progress, North Africa presents a paradox. In fact, on the one hand, the region has the lowest rate of women in employment in the world (Table 9), yet on the other hand, its rates for women's access to education are equivalent, if not superior, to those observed in other developing countries. Moreover, women in North Africa do not face any legal barrier to their access to economic activity. The investment in girls' education made by families and Governments, and the fall in fertility rates, should have had a more rapid and more powerful impact on women's activity. This has not been the case. North Africa thus has an unexploited potential of human capital in its educated women, which leads to losses of economic growth, jobs and wellbeing for families and society as a whole.

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<sup>2</sup> It has been amply demonstrated that the likelihood of a woman finding herself in the labour market rises with her level of education (United Nations, 2005; UNDP/Egypt, 2004; ILO, 2003b).

<sup>3</sup> Women's access to professional training is claimed in some studies to have more impact on women's employment than their access to primary and secondary school (United Nations Millennium Project, 2005)

<sup>4</sup> ILO (2003a)

<sup>5</sup> Morocco, Tunisia and Egypt

<sup>6</sup> ILO (2003a)

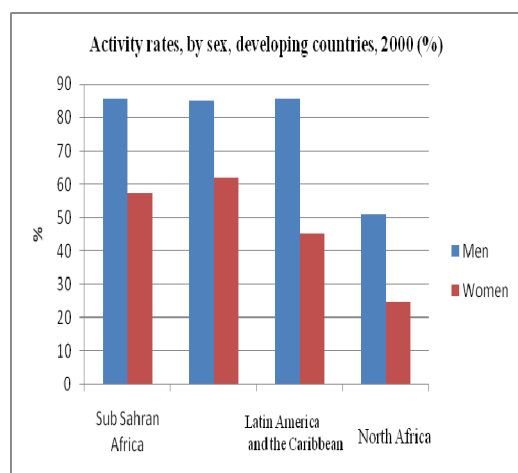
<sup>7</sup> CAWTAR (2001)

<sup>8</sup> ILO (2003b)

<sup>9</sup> ILO (2003b)

**Table 9:** Activity rates, by sex, developing countries, 2000 (%)

Regions	Men	Women
Sub Saharan Africa	85.5	57.4
Asia	85.	62.0
Latin America and the Caribbean	85.5	45.2
North Africa	51.0	24.7



Source: CAWTAR (2001)

The data for 1980 and 2000 show that women's activity has changed, also in terms of age structure. It can be seen that the increase in women's participation in the labour market is distributed over all age groups, except the youngest (15-19 age group) and the oldest (over 60 age group), in which the activity rates have fallen. For the youngest group, this trend reveals, among other things, a new type of behaviour by very young women, who delay their entry into the labour market, preferring to devote themselves to education or training. Although the other age groups (from 20 to 59) display an increased activity rate, this trend is much more marked among women aged between 20 and 30 years old (almost one out of two such women was working in 2000). It is thus the mass influx of young women into the labour market, and the fact that they continue to work for a longer period, that seem to explain in large part the general increase in women's activity rate.

**Table 10:** Average activity rate for women by age group, North Africa, 1980-2000 (%)

Age	1980	2000
15-19	30	26
20-24	39	48
25-29	39	49
30-34	38	45
35-39	37	42
40-44	38	41
45-49	37	39
50-5	35	35
60+	21	19



The distribution by sector of economically active women is also beginning to change, showing greater diversification<sup>10</sup>. Upon leaving the agricultural sector, women went mainly towards the service sector. In 1990, a little less than one third of women's labour force was found in this sector. In the industrial sector, the rise in the proportion of active women has also been general; in 1990 the highest concentration of women active in industry was found in Tunisia (31.55 per cent) and in Morocco (19 per cent). Detailed data on the industrial sector reveal the place occupied by manufacturing activities (mainly textiles, clothing and leather) for the female labour force in Tunisia, and Morocco. Given the low levels of technology and qualification required for this work, this sector uses a high proportion of unqualified labour. Women with little or no education have provided the major source of labour for this sector. They are preferred to men because there is a tradition of women working in these sectors, and because women are considered more flexible, more docile and cheaper than male workers are. Thousands of women with no qualifications may lose their jobs during the process of technological transformation. In these countries, increased competition has driven unqualified women out of the labour market.

### **a) Women's jobs**

In North Africa, the public sector has been the main employer of the female workforce. In contrast, more men are found in the private sector.<sup>11</sup> The highest concentrations of women employed in the public sector are found in Algeria<sup>12</sup> (85 per cent of working women in the 1990s)<sup>13</sup>. In Morocco, in contrast, women in the public sector represented no more than 7 per cent of employed women in the 1990s.<sup>14</sup>

The strong presence of women in the public sector in North Africa is due to several factors, including:

- The types of jobs available in public services (education and health) are socially acceptable for women.
- The legal framework is more egalitarian in terms of recruitment and salaries than in the private sector.
- The working conditions (maternity leave and working hours) offered are more attractive than those in the private sector.

In Tunisia, women constitute:

- 27 per cent of judges
- 31 per cent of lawyers
- 42 per cent of the medical profession
- 72 per cent of pharmacists
- 34 per cent of journalists

They also represent:

- 21 per cent of the staff in the public service
- 51 per cent of basic education instructors
- 48 per cent of secondary education teachers

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<sup>10</sup> The data of ILO's LABORSTA database end in 1990

<sup>11</sup> World Bank (2004b)

<sup>12</sup> The health and education sectors are highly feminized, employing 80 per cent of the women working in the public administration (Algeria, 2004)

<sup>13</sup> World Bank (2004b)

<sup>14</sup> World Bank (2004b)

- 40 per cent of university professors
- 16.7 per cent in the sector of agriculture and fisheries
- 26.4 per cent in the die sector of manufacturing industries
- 46.9 per cent in the sector of commerce and services

Data on the share of women in S&T research and their representation by field in scientific and technological careers is not available. The total proportion of women researchers is 30.1-45 per cent in Tunisia (30.1-45 per cent in Algeria, 0-30 per cent in Morocco). They mainly work at university research structures. In academic careers (teaching and research), the percentage of women academic staff varies by field, grade, and university

**Table 11:** Percentage of women academic staff by grade

Position	%
Assistant professor (grade C)	70
Assistant professor (grade B)	50
Professor (grade A)	10

Women are underrepresented in positions of S&T leadership – in senior professorships, research projects, and institutional management. As of 2004, approximately 92 per cent of research team leaders in research structures (research laboratories) were men. As a result of women’s absence among scientific and technical staff in government research and development institutions, women have been completely absent in decision-making and priority setting in scientific research.

## b) Entrepreneurship

Entering the formal economy as workers or businesswomen allows women to provide for themselves and their families, and to play their part in generating economic growth and job creation. Quantitative data on the trends concerning women classified as employers or “entrepreneurs” are only available for Tunisia and Morocco. In Tunisia, studies emphasize that businesswomen, like businessmen, are an emerging category. Women were responsible for the setting up of 7 per cent of the total number of businesses registered and approved in 1989 and 13 per cent of those in 1993. The share of women entrepreneurs in the total female workforce increased from 0.9 per cent to 1.6 per cent between 1994 and 1999. The number of businesswomen has risen from 287 in 1970 to 2633 in 1990 and 10,000 in 2004.<sup>15</sup> In 2000, women headed 6 per cent of industrial enterprises, reaching 6.6 per cent for businesses employing more than ten workers.<sup>16</sup>

A regional study of CREDIF (Center for Research, Study Documentation and Information on Women) in wider Tunis (the country’s capital) revealed that:

- 48, 8 per cent of women entrepreneur are young (28-40 age group)
- 25, 4 per cent are single
- 14 per cent of single women entrepreneur live alone

**Table 12:** Distribution of women entrepreneur by sector

Sectors	Women entrepreneur
Services	34%

<sup>15</sup> Tunisia (2004)

<sup>16</sup> Tunisia (2004)

Industry	42%
Commerce	14%
Craft	10%
Total	100%

Women's activities were mainly in textiles, clothing and leather (25.1 per cent), cultural and social services (25.2 per cent), and trade (18 per cent).

In Morocco, the number of businesswomen managing and/or owning a business involving several sectors of activity and employing qualified labour is around 5000, which represents about 0.5 per cent of the total of working women. Most of these female-run businesses are small and medium-size businesses, operating in the organized sector, mainly in clothing and services sectors (50 per cent and 47 per cent respectively). Of these businesses, 70 per cent have recently been created and are concentrated in the country's capital. 75 per cent of the women are aged between 30 and 39; and almost half of them employ fewer than ten workers (40 per cent).<sup>17</sup> A survey of the manufacturing sector identified 39 businesses managed by women (representing 5 per cent).<sup>18</sup>

The emergence of the services sector has also played an important role. We can in fact observe a predominance of businesswomen in the tertiary sector, and their concentration in activities that constitute an extension of their traditional role in society, such as dressmaking, weaving, confectionery and food processing. This trend can be explained by the following facts, in particular:

- In taking up these types of activity, women are apparently more easily accepted in the business milieu, and by suppliers and customers.
- Since women generally have limited financial resources, they choose activities which are more accessible and which can often be practiced from home.
- They are able to combine family and professional responsibilities, particularly in the case of young women.
- They opt for activities where they have an absolute advantage, having an insight into what women and families need today and therefore being better placed to respond to these needs.

Women also invest in activities with a high value added. In fact, we are seeing the emergence of a new generation of women with high education who are turning to modern sectors such as import-export operations, consultancies, training, tourism, etc. They are also present, although a minority, in other domains such as industrial food processing, fishing, construction, mechanical and electrical industries, chemistry, rubber and construction materials.

#### **4) Youth unemployment**

Despite all the efforts to promote growth and significant investments in education, North Africa exhibited the highest youth unemployment rate in the world (25.7 per cent in 2006) as well as a large gender gap in unemployment. Recent estimates predict that as a result of the economic crisis, youth unemployment could increase up to 4 per cent in North Africa over 2008-2009, and particularly impact young women. Despite relatively high and sustained economic growth since 2004, employment creation has been insufficient to significantly

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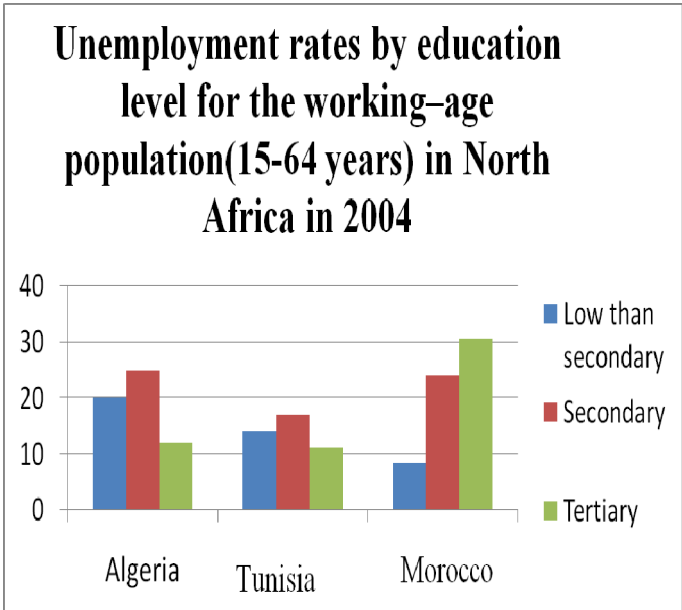
<sup>17</sup> ILO (2002c)

<sup>18</sup> Morocco (2002)

reduce unemployment, or to absorb the flow of youth joining the labour market. As a result, the unemployment rate remains high among youth, and has been rapidly increasing among graduates with secondary education and university degrees. Unemployment rates are higher for women than for men, although the rates are not strictly comparable, given the lower overall labour force participation rate for women. More women in the labour market have a higher educational level, and many are waiting for the public sector. Relatively few women enter the private formal sector.

**Table 13:** Unemployment rates by gender (North Africa countries in 2004)

	Algeria	Tunisia	Morocco
<b>National</b>	27.3%	15.7%	19.3
<b>Men</b>	26.6	15.4%	17.4
<b>Women</b>	31.4	16.7%	25.8



Source: ILO (LABORSTA, 2005)

Within countries, the demand for labour is generally insufficient or distorted because of low economic growth, the growing numbers of well-educated people, the dominant role of the Government as an employer, and the relatively high cost of doing business. As a result, productivity and the returns to education are low. Education systems do not produce the skills needed in an increasingly competitive world.

**Table 14:** Unemployment rates by education level for the working-age population (15-64 years) in North Africa in 2004

	Algeria	Tunisia	Morocco
Low than secondary	20.1	14.2	8.5
Secondary	25	17.1	24.1
Tertiary	12	11.2	30.7

Source: Compiled by the ETF using data from country labour force surveys

In Morocco, for example, the unemployment rate for secondary school leavers is much higher than the rate for young people with lower education levels, and is as high as 30 per cent for university graduates.

In Tunisia where the labour market is more competitive, people with higher educational attainment may compete with less educated candidates for the same jobs. This has generated a situation in which young people with basic or intermediate education find it difficult to enter the labour market. In order to address this significant increase in unemployed graduates, the Tunisian Ministry of Employment and Professional Integration of Youth, in collaboration with the World Bank, conducted a survey at the end of 2005 on young graduates to attempt to identify some mechanisms to integrate them in the labour market.

#### **Some results of the study of 4763 young graduates (Statistics 2005)**

- 46 per cent of young graduates did not have a job 18 months after graduation.
- Graduates with master's and advanced technician diplomas represent 90 per cent of graduates.
- Nearly 50 per cent of graduates with master's and advanced technician diplomas are unemployed.
- Ten per cent of engineers are unemployed, the lowest percentage of unemployment among all diplomas and specialties.
- The unemployment rate for technicians from higher institutes of technology (Instituts supérieurs des études technologiques (ISETs)) is 45 per cent, compared to 53 per cent for the non-ISET technicians.
- Young women represent 57 per cent of graduates compared to 43 per cent of young men.
- 51 per cent of men are employed compared to 38 per cent of women.

#### **Two principal recommendations of the study**

*Better align graduates' skills with the needs of the economy.*

Overall, the results of the survey show a serious imbalance between the actual skills of graduates and the demand for skills in Tunisia. The diploma and the field of specialty remain the principal factors that dictate entry into the workforce.

*Identify mechanisms to adjust the flow of students that pursue different diploma specialties and better align the graduates' skills with the needs of the economy.*

In the short-term and medium-term, the analysis also suggests the need to strengthen the employment assistance programs, however, it is important to structure these programs in a manner that will maximize their impact and minimize their costs. In sum, education systems in MENA will have to change to adapt to new demands of the labour market and the increasing number of youth.

#### **5) The region needs to reshape its education systems to face up to economic, demographic and financial challenges<sup>19</sup>**

The objective of a basic level of instruction for all has been reached but the path taken in the future will need to address three realities:

***The knowledge economy:*** Competitiveness today depends on firms that employ a well-educated, technically-skilled workforce, and that are capable of adopting new technologies and selling sophisticated goods and services.

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<sup>19</sup> World Bank (2008). *The Road Not Travelled: Education Reform in the Middle East and North Africa.*, Washington D.C.

Most MENA countries continue to use a more traditional model of pedagogy (for example, copying from the blackboard, and little interaction between teachers and students).

***The “Youth Bulge”:*** As a result of the high fertility rates of the 1960s and 1970s, MENA has one of the largest youth population in the world (less than 24 years old). This youth bulge will substantially affect demand for education. If current rates of school dropout are retained, the labour force will be increasingly populated by adults who have not completed secondary or higher education.

***Sector financing constraints:*** In most countries, demographic changes and calls to change the content and process of education provision will require additional resources. MENA governments already spend a substantial level of resources on the sector and growth in spending has usually outpaced economic growth.

## **Conclusion**

The gender horizon in the MENA region is becoming much brighter. Investments in education and health are beginning to have an effect on women’s empowerment. Their effects will be magnified in the next decade. More, however, needs to be done. As MENA reconsiders its development policies to create better opportunities for its youth, it needs to view gender issues as part of the solution. Tackling these issues effectively and in a sustainable manner will take considerable political will and stamina. It is a long road ahead, but the journey must begin today if the families of the region are to benefit from all available resources for economic growth human and other.