

HIGHER EDUCATION & SCIENTIFIC RESEARCH IN THE ARAB WORLD

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The Arab World

22 Countries:

Africa: 10

Asia :12



Higher Education in the Arab World

- According to the *Middle East Brief*, **no.36 May 2009**, Higher learning is deeply rooted in the history and societies of the Arab Middle East. After the seventh century and the islamization of the Arab world, local religious schools known as madrasa became the main institutions of higher learning in the Middle East. They established and disseminated educational standards that are still applied in present-day universities, such as the separation of master's from doctorate programs, tenure, and protections for academic freedom.

- Madrasas like Al Zaytounah (Tunisia, 734 AD), the Qarawiyyun in Fez (Morroco 859AD), al-Azhar in Cairo (Egypt, 970AD) and Al Mustansiriyah in Iraq (984 AD) and several universities were established in the Andulus area during the ninth and tenth centuries. They originated in intellectual movements such as humanism and scholasticism, which nurtured the subsequent flourishing of Western scholarship after the twelfth century.
- Those universities are argued to be the first universities in the world ever established (even before the first European University – Bologna University 988AD) and most of them were funded by the Islamic Waqf (Endowment).

Al-Qarawiyeen University

Founded in 859



- **During the same period, other institutions of the Arab world such as hospitals, libraries, observatories, and private homes known as “academies” undertook the development of the nonreligious sciences, inspired by the ancient Greeks. The most famous of these academies was the Beit al Hikma (House of Wisdom) in Baghdad, where numerous fields within the sciences (astronomy, physics, mathematics, medicine, chemistry, geography) flourished until the sixteenth century.**

- **Yet the Ottomans, who ruled the Arab world throughout this period, strove as early as the eighteenth century to get their Empire back into the academic game. In 1720, the Sultan Ahmed III sent delegations of scholars to Europe in order to obtain translations of Western scientific books. This pattern reached its peak during the reign of Mohamed Ali (r. 1805–49), when dozens of modern institutions of higher learning were established on the European model, mainly in Egypt.**

- **Meanwhile—in fact, since the eighteenth century—European missionaries, followed by American Christians, were founding dozens of schools and institutions of higher learning in the Middle East, while the French established institutions of higher learning in North Africa. Thus, neither the globalization of higher education nor “Westernization” is a new trend in the Middle East.**

- In the modern history, Higher education in Arab countries is considered recent. In the past decades, most Arab students used to study mainly at few Arab universities spread in the Arab World in addition to universities in Turkey, Pakistan, India, Europe, Russia and USA.

- Until 1953, only 14 public and private universities were established in the Arab World. Most existing private universities were very old and mostly foreign. For example, in Lebanon there were three pioneering institutions, namely the American university in Beirut in 1866 ,Saint Joseph University in 1875 and the Lebanese University in 1951.

Arab Universities founded before 1953

| COUNTRY | Name of University |
|---------|--|
| Egypt | 1- Al Azhar University, 970 2- The Egyptian University (present Cairo University) 1908 3-The American University, 1919 4- University of Farouk the First in Alexandria (present Alexandria University) 1938. 5- Ain Shams University, 1950 |
| Iraq | 6-Al-Mustansiryah University, 984 |
| Syria | 7-The Syrian University (present Damascus University)1923 |
| Algeria | 8-University of Algier, 1909 |
| Morocco | 9-Al-Qarawiyeen University, 859 |
| Tunisia | 10-Al Zaytounah University, 734. |
| Lebanon | 11-The American University, 1866 12-Saint Joseph University, 1875 13- Lebanese University, 1951 |
| Sudan | 14- Khartoum University (Gordon Memorial College) ,1902 |

- During the last twenty five years, private universities increased rapidly in the Arab World and absorbed around 30% of students enrolled in Higher Education.
- While private non-profit universities in Lebanon date from the 19th century, Jordan opened its first private for-profit university in 1990, followed by Egypt, Syria, Yemen, Sudan and the Gulf Region.
- At present, there are more than 250 private universities in the Arab World. This represents 40% of the total number of Arab universities . At present, there are more than 600 Universities in the Arab World.

- In some Arab Countries, Private universities and HE institutions managed at one time to take over 40% of total enrollment.
- In some Far Eastern countries such as Japan and South Korea, enrollment percentage of Private HE exceeds 50% while in most Western European Countries, Private higher education is still around 30% of the total higher education.
- In USA, private higher education is around 20% of total enrollment.

Quantitative Development of Arab Universities, Students and Faculty Staff

1 – The number of Arab universities expanded from 233 Universities in 2003 to about 286 Universities in 2006, of which are 153 governmental and 133 private. The number of students was about 4,400,000 and the number faculty staff members was 183.000 of whom were 78% Humanities, 22% scientific studies. In 2013 the number rose to more than 600 universities, around 11 million students and 250,000 faculty members.

Quantitative Development of Arab Universities, Students and Faculty Staff

- 2 – The percentage of the student to the faculty member is about 31:1 and in some universities up to 100:1, while in the Gulf States it reaches up to 17:1 to 41:1. However, the global ideal level is 15:1 student to faculty member.
- 3 – The number of undergraduate students is 90% of the total students number, and only 10% of them are graduate students.

4- The cost of a university student in the Arab world is about \$ 2700 a year and it might reach \$ 550 in some countries. In the Gulf countries, the student's cost is between 15000-50000 dollars.

5- The proportion of expenditure on university education in the Arab world is about 1.3% of the total national income.

The Association of Arab Universities



The Association of Arab Universities

- The Association of Arab Universities is the result of an initiative adopted by the Arab League. The idea first came out during a seminar that was held in Benghazi, Libya in 1964 to study the problems of higher education in the Arab world and to set frameworks of cooperation among Arab universities. Fortunately, the seminar ended up in establishing the Association of Arab Universities. Following the approval of the AARU's By-law by the Arab League, a temporary Secretariat General was formed. In 1969, the First General Conference was convened in Alexandria and a resolution was adopted to designate a permanent Secretariat General. At that time, the number of Arab Universities was **23**.

Role of AARU in Enhancing Internationalization

- in order to facilitate cooperation between Arab universities and relevant regional and international universities, and to keep pace with the various developments in learning techniques and patterns, AArU will organize several activities:
 - (1) **AArU has organized in cooperation with the Islamic Science University of Malaysia (USIM) a periodical Arab-Malaysian Higher Education Summit for Arab and Malaysian universities in addition to countries of South Eastern Asia which was held from 2-6 October 2012 in Malaysia. The next summit will be hosted by Mansoura University in Egypt during 2014.**

- (2) AArU will organize in cooperation with the Turkish Universities a similar periodical Summit for Arab and Turkish universities' presidents during the month of April 2014.**
- (3) The Association of Arab universities organized the First Arab-Euro University Conference on Higher Education in collaboration with The University of Barcelona (UB), and the European University Association (EUA) during 29-31 May 2013 in Barcelona, Spain.**

(4) AArU is preparing for the 2nd Arab-Euro Conference on Higher-Education (AECHE) to be held at Princess Sumaya University for Technology, in Amman, during 10-12 June 2014, noting that this conference will be periodical and is jointly organized by AArU, University of Barcelona and the European University Association (EUA)

(5) AArU will also organize an Arab German Conference on Higher Education to be hosted by Chemnitz Technical University in Germany by the end of October 2014. The conference will open doors for collaboration in master and doctoral programs by offering scholarships to distinguished students from Arab universities and will be targeted to technical universities with special concern to interdisciplinary studies programs in addition to giving the chance to visit the infrastructure of German universities.

(6) In view of the importance of enhancing cooperation between scientists, technologists and researchers working in various educational and research institutions , organizations and centers related to teaching and scientific research abroad, and its counterparts in the Arab world. AArU will organize in cooperation with King Saud University in Saudi Arabia a conference for Arab scientist abroad aiming at activating their role through conducting joint scientific research focusing on applied research;

Participating in the supervision of postgraduate programs at Arab Universities; Evaluating scientific research published in Arab journals and research papers submitted to academic promotion; Participating in conferences and seminars held either abroad or at their homelands and exchanging outcomes of these activities.

- **At the End, Arab countries need to face all these challenges. Sooner or later they will be forced to commence reform plans to ensure equity, quality and efficiency to both public and private institutions within a regulatory framework that introduces incentive mechanisms and grant some degree of autonomy.**

Institutions affiliated to AArU

- 1- The Arab Council for Training of Arab Universities Students (hosted by University of Jordan). The Council is to facilitates intra-Arab student mobility from various universities to get professional training opportunities at different Arab universities, companies and organizations located in different Arab countries. The Council provides each year more than 2000 exchange opportunity for Arab member universities students.**

- **The main aim of the council is to coordinate the efforts to secure and exchange training opportunities for students of the Arab universities by encouraging member universities and the various Arab organizations to provide subsidized training offers for the students in different fields of study, in addition to encouraging talents and invention among students of Arab universities by promoting extracurricular activities that will have a positive impact on their culture and help serve the Arab communities and civilization.**

The Council organizes two annual forums:

- 1 The Forum for Exchange of Student Training Offers. This forum is organized by the Council in association with and hosted by one of the Arab universities with a duration of three days. In this forum, representatives from different Arab universities meet and exchange student training offers. They also discuss issues related to student training opportunities and propose suggestions to help improve the exchange process and practices.**

The outcome of this forum is documented in the form of mutual agreements between Arab universities and in the form of recommendations agreed on by the representatives. The Council will monitor the execution of the agreements during the training time, which is usually the next summer term, in addition to help implement the recommendations.

- 2) **The Forum for Students Inventions.** This forum is also organized in association with and hosted by one of the Arab universities. The forum is held under a certain theme every year. Prior to this forum, a call is distributed among Arab universities for the students and their faculty advisors to submit their work (scientific articles, case studies, art work, poems, story,..etc) in certain tracks related to the main theme of the forum. The duration of the forum is usually five days during which students will present their work in front of scientific committees in the different tracks.

Final results are announced at the end, and winning students will receive prizes from the Council and the host university. The forum also includes open discussions and seminars where faculty members and students may participate. The outcome of this forum is documented in the form of a publication of the winning projects and in the form of the discussions and recommendations.

- In the same context, many Arab member universities, such as the German University of Cairo and the German Jordanian University, have been established with a vision to enhance international cooperation particularly with German Universities.
- The German University of Cairo's vision is "Building a leading centre of excellence in teaching and research that will effectively contribute to the general welfare nationally and internationally and endeavour the scientific, technical, economic and cultural cooperation between Egypt and Germany".

- The German-Jordanian University (GJU) aims to play a significant role in promoting links between Jordan and Europe, particularly Germany; by taking advantage of best practices in education in both Jordan and Germany, The German project office, responsible for facilitation of GJU cooperation with German institutions, is affiliated with the Magdeburg- Stendhal University of Applied Sciences, in the Federal State of Saxony-Anhalt of Central Germany. The German project team has already managed to attract some (70) dedicated German universities to its cooperating consortium.
- The project is funded by the Federal Ministry of Education and Research (BMBF) and the German Academic Exchange Service (DAAD) under the "German Study Programmes Abroad" programme.

- 2- The Arab Council for Students Activities (hosted by South Valley university, Egypt).**
- 3- The Arab Council for Higher Studies and Scientific Research (hosted by Cairo University).**
- 4- The Council of Quality Assurance and Accreditation (at the premises of AArU).**

- 5- The Center for Reserving University Theses
(hosted by University of Jordan).**
- 6- The Arab Periodicals Center (hosted by
Yarmouk University, Jordan).**
- 7- Fund of Supporting Palestinian Universities,
(hosted by University of Jordan).**
- 8- Scientific Research Fund (at the premises of
AARU)**
- 9-The Societies of Counterpart Faculties at
Arab Universities.**

Societies of Counterpart Faculties at Arab Universities

Twenty one Societies have been established so far, namely:

- 1- Society of Faculties of Physical Education, which is hosted by the Faculty of Physical Education at the University of Jordan.**
- 2- Society of Faculties of Veterinary Medicine, which is hosted by the Faculty of Veterinary Medicine at the University of Science and Technology, Jordan.**
- 3- Society of Faculties of Medicine, which is hosted by the Faculty of Medicine at the University of Jordan.**

- 4- Society of Faculties of Pharmacy, which is hosted by the Faculty of Pharmacy at the University of Damascus, Syria.**
- 5- Society of Faculties of Arts, which is hosted by the Faculty of Arts at Yarmuk University, Jordan.**
- 6- Society of Faculties of Tourism and Hotel Management, which is hosted by the Faculty of Tourism and Hotel Management at the Suez Canal University, Egypt.**
- 7- Society of Faculties of Engineering, which is hosted by the Faculty of Engineering at Baghdad University, Iraq.**

- 8- Society of Faculties of Dentistry, which is hosted by the Faculty of Dentistry at Saint Joseph University, Lebanon.**
- 9- Society of Faculties of Education, which is hosted by the Faculty of Education at Damascus University, Syria.**
- 10-Society of Faculties of Fine Arts, which is hosted by the Faculty of Fine Arts at Lebanese University, Lebanon.**
- 11-Society of Faculties of Business Administration and Commerce, which is hosted by the Faculty of Business Administration and Commerce at Saint-Esprit University, Lebanon.**

12-Society of Faculties of Agriculture, which is hosted by the Faculty of Agriculture at Khartoum University, Sudan.

13-Society of Faculties of Science, which is hosted by the Faculty of Science at Bahrain University, Bahrain.

14-Society of Faculties of Nursing, which is hosted by the Faculty of Nursing at Al-Zaytoonah Jordanian Private University, Jordan.

15-Society of Faculties of Shari'a, which is hosted by the Faculty of Shari'a at Algeria University, Algeria.

16-Society of Faculties of Computers and Informatics, which is hosted by the Faculty of Computers and Informatics at Zarqa Private University, Jordan.

17-Society of Faculties of Law, which is hosted by the Faculty of Law at Cairo University, Egypt.

18-Society of Faculties of Physiotherapy, which is hosted by the Faculty of Physiotherapy at Saint-Joseph University, Lebanon.

19-Society of Faculties of Mass Media, which is hosted by the Faculty of Mass Communication at Cairo University, Egypt.

**20-Society of Faculties of Languages,
which is hosted by the Faculty of Arts
and Humanities at Albaath University,
Syria.**

**21-Society of Faculties of Social Work,
which is hosted by Faculty of Education
and Social Work at the Modern
University of Business and Science
(MUBS), Lebanon.**

AARU also contribute in various EU – Erasmus Mundus projects, such as:

AI FIHRI programme (2013-2016) which proposes a coherent promotion strategy of the EU Higher Education and international training, involving 11 universities from North Africa and European partners. The program aims at contributing to development of human resources and international cooperation capacity of Higher education institutions by putting forward a mobility scheme of 203 people.

Program for Excellence Academic Cooperation Exchange PEACE (EU/Jordan, Syria, Lebanon and Palestine- (2012-2016)).The objective of the program is to stimulate exchanges, contacts and transfer of know-how in order to provide valuable input for improving socioeconomic situation, to achieve greater equality, transparency and employability, to improve skills and qualification of institutions and individuals in number of areas of specific interest and to enhance bilateral relations . The program

Project on “Development of a Higher Education and Research Area between Europe and the Middle EaSt HERMES” (2013-2017). The project is coordinated by Aix-Marseille University/Tethys Network and consists of 20 partner universities - 11 from the Middle East (Jordan, Lebanon, Syria, and Palestine) and 9 from the EU).The objectives are to develop higher education teaching and learning capacity through the transfer of know-how and knowledge; to improve the employability of the individuals by giving them the appropriate skills as regards to the labour market and an international experience in the context of globalization;

To better integrate Middle East universities within the European Higher Education and Research Area and to contribute to the harmonization of HE curricula and diplomas in accordance with the Bologna process. The project's objectives will be achieved through the mobility activities which concern undergraduate, master, doctoral and post-doctoral students as well as academic and administrative staff.

AARU signed partnership with many tempus projects such as:

- **TEMPUS Leadership in Higher Education Management, 2010-2012**, which was dedicated to the topic of university Leadership. It aims to help at three levels – existing leaders, potential leaders and aspiring leaders. The material from the previous levels will be distilled into masters level modules which could form the basis of a Masters degree. The outcome of the project was launching the Arab European Leadership Network (ARELEN) at the headquarters of AARU. and will be the hub for the leadership training in Jordan, and will be replicated in other locations across the MENA region. The AARU leadership centre will be officially opened in the second half of February 2014.

The project is also supporting the role of women in Higher Education management through a group called WHEEL

- **TEMPUS EQuAM Enhancing Quality Management in Jordanian Universities (2012-2015)** . The project is led by University of Barcelona and aims at assisting the creation of a model to assess the quality of the Jordanian higher education system.

- **Building Capacity for University Management in the ENPI South Region BUCUM (2012-2014)** which is coordinated by Cardiff Metropolitan University in the MENA region. The wider objective of the project is to demonstrate that good management practices can build sustainable Higher Education cooperation between nations. The project does this by addressing the challenges facing the management of a global university in the 21st Century.

- **Modernisation of Institutional Management of Internationalisation in South Neighbouring Countries (2013-2015)**, coordinated by University of Barcelona. An internationalisation management model in partner institutions will be developed in order to provide appropriate knowledge and means to improve internationalisation actions and improving the institutional management processes of internationalization through establishing governance procedures that enhance internationalization, building their capacity, and encouraging them to share best-practices and develop strong partnership with EU partners.

- **Enhancing Quality for Technology-Enhanced Learning at Jordanian Universities EQTeL 2013**, coordinated by Open University of Catalunya, Spain aims to improve the quality and relevance of technology-enhanced learning (TeL) at Jordanian higher education institutions and to enable the country's easier inclusion into European Higher Education Area. The main project objective is to improve, develop and implement accreditation standards, guidelines and procedures for quality assurance of TeL courses and study programs at a national level.

- **Knowledge of Recognition Procedures in ENPI South Countries (RecoNow) 2013**, coordinated by Bologna University, Italy. The aim of RecoNow project is to favour and to increase the quality of vertical and horizontal student mobility within Middle East and European higher education systems. Partners intend to improve competencies and skills of credential evaluators by defining common practices and realising common tools among European and Middle East national bodies and Higher Education Institutions (HEIs), starting from the experience of
- European HEIs in relation with the Bologna Process and practices adopted by ENIC/NARIC centers.

- **Tuning the Middle East (2013-2015), coordinated by Duesto university , Spain** The project is designed to facilitate the modernization of higher education in SNA by the applying the Tuning methodology for the development of the degree programmes in partners' universities and development of the following lines: curricula design and delivery, employability of graduates, recognition of the degree programs, quality of higher education, and staff training.

AArU also contributes in the African Higher Education Harmonization and Tuning Project, which is part of the Africa-EU strategic partnership and is to enhance degree comparability, graduate mobility and employability.

The Arab world today faces a host of hurdles when it comes to higher education and scientific research including a lack of clear focus in research priorities and strategies, insufficient time and funding to meet research goals, low awareness of the importance and impact of good scientific research, inadequate networking opportunities and databases, limited international collaborative efforts, and of course, the brain-drain.

The First Challenge is : Quality Assurance

As a result of Globalization, competitiveness and accelerating expansion of private Higher Education, it is vital to take several actions such as :

- To establish national quality assurance frameworks and to develop current established ones in order to guarantee the quality of education and control its outcomes.**
- To develop, enhance and review current internal quality management systems.**

- **To encourage establishing regional quality assurance networks to help promoting QA of higher education in the region.**
- **To build capacities for education quality assurance systems**
- **To develop action plans on quality assurance of higher education institutions.**
- **To enhance international cooperation in fields of Higher education quality assurance.**

Role of AARU in Quality Assurance

- Due to the importance of the topic of quality assurance, the Council of AARU agreed in its meeting in Algeria 2006 to establish a council for quality assurance and accreditation (QAAC) for member universities to adopt the policies of the Association in this regard.
- The Vision of the QAAC of AARU is to:-
- *“Guarantee a high quality precision for higher education institutes of AARU members”.*

- Its mission is to assist Arab Universities to improve their quality, through spreading of the culture of QA, preparing QA guides, provide advice and training to support the process of QA and Accreditation for institutes and programs. So far, the council has issued six reference manuals and guides related to self and external assessment and general accreditation in addition to performance indicators and criteria and weights to measure the performance indicators.

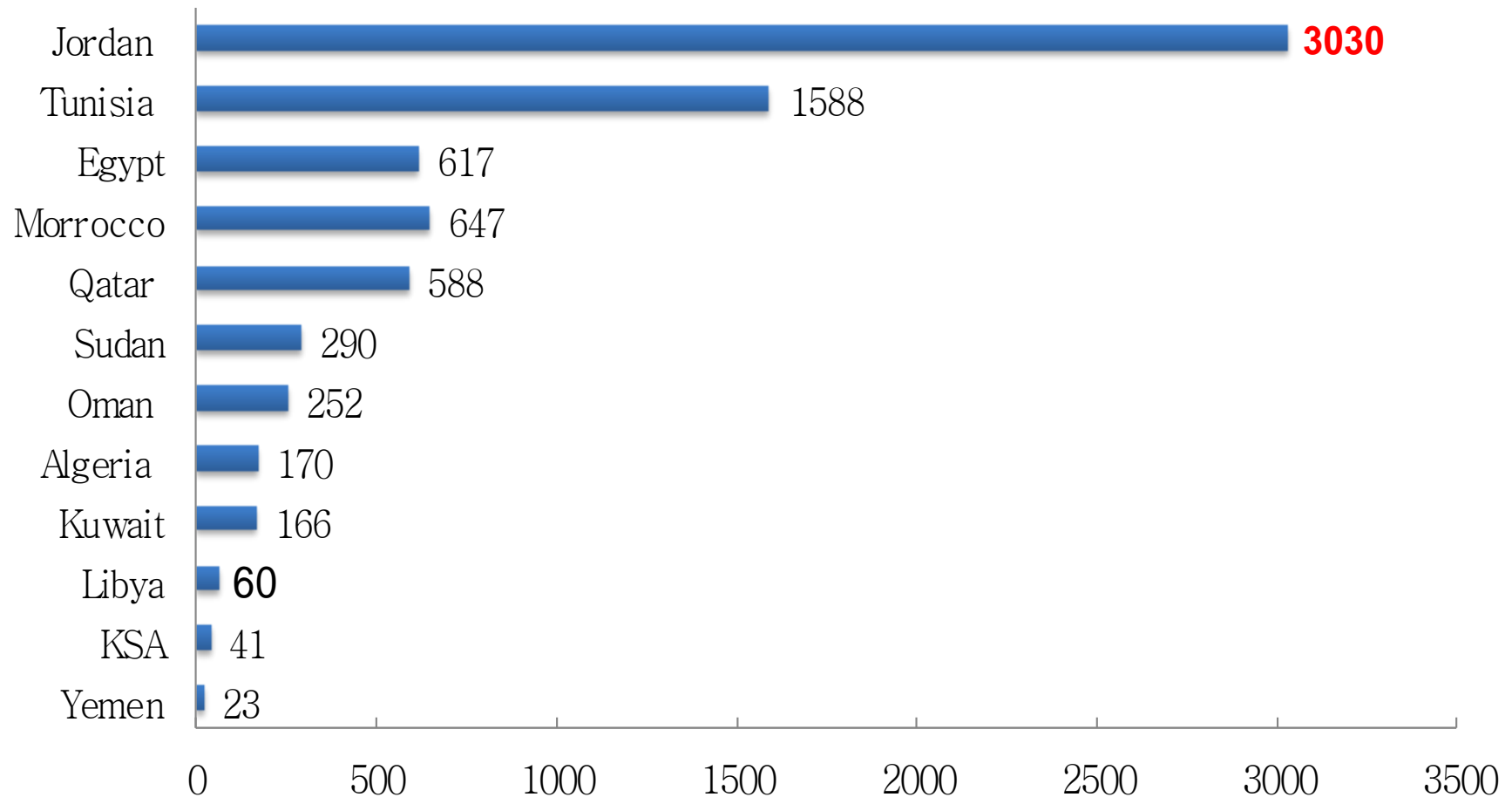
- AArU cooperates with national accreditation bodies to discuss and plan together in order to create an Arab umbrella to take the responsibility of quality assurance, while making all efforts with UNESCO and relevant organizations, to give effect to the Convention on the Recognition of Studies, Certificates, Diplomas, Degrees and other Academic Qualifications in Higher Education in the Arab States to ensure promoting academic mobility and strengthening international understanding.

- The importance of these indicators is the fact that Arabs lack readiness to strongly compete in the twenty-first century. The Arab world must start reforming HE to meet the challenges that globalization has imposed upon it. With all these problems, our educational institutions should set new precisions and criteria to guarantee a high quality educational systems and programs, and to integrate new technologies to be able to compete with other institutions all over the world especially after the influence of globalization

The Second Challenge facing Arab universities is Poor Scientific Research

- Arab's expenditures on scientific research are about 0.2-0.4% of the national income GDP, while it is around 4-6% in and industrialized developed countries.**
- The number of researchers per million inhabitants is 450 in the Arab Countries, whereas in the developed countries the number is more than 5000 per million inhabitants.**

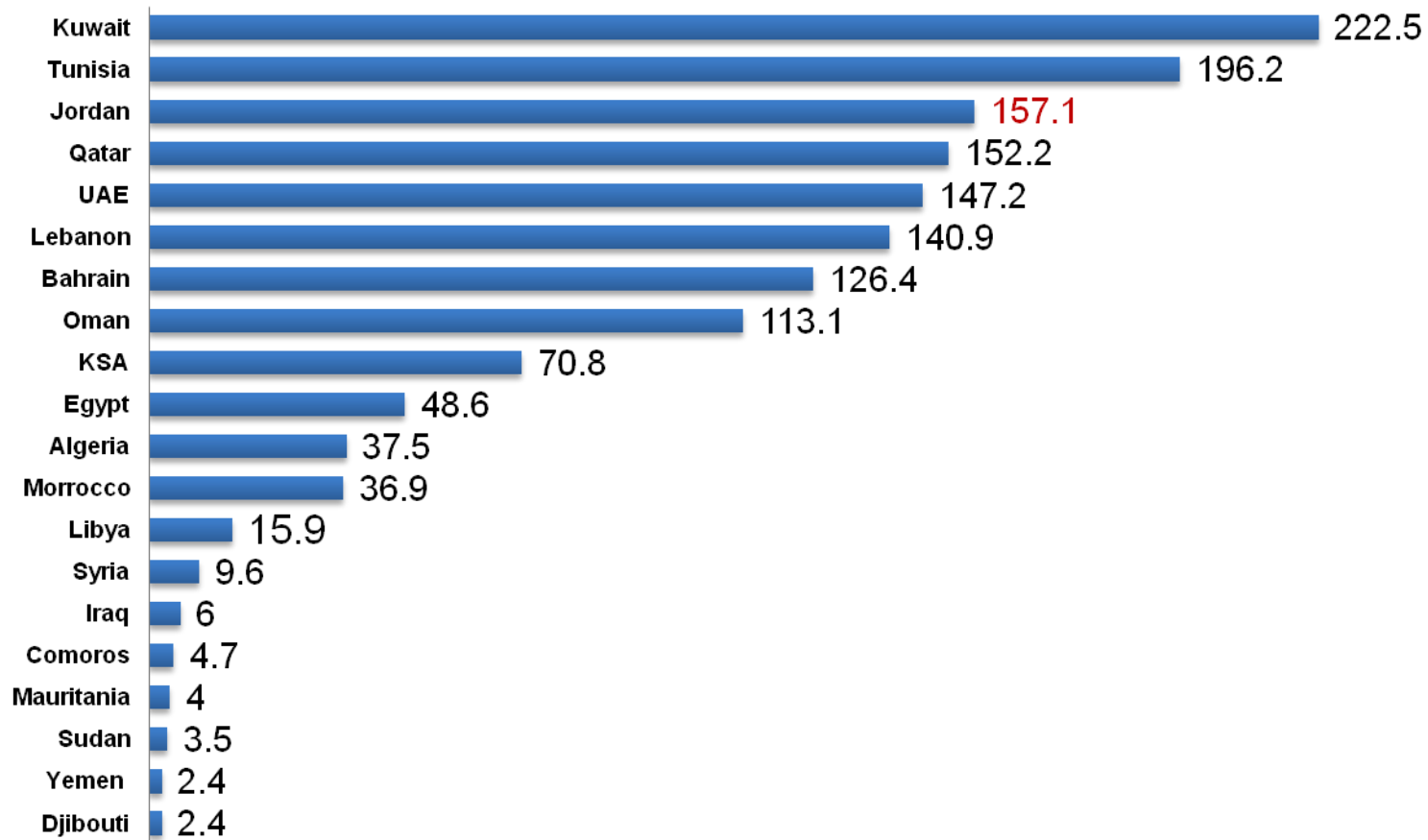
Researchers per million inhabitants (2010)



Note: for Jordan, Sudan, Libya & Saudi Arabia, the data are a head count; for the remainder of countries, data are full-time equivalent; for Sudan, the data are estimation; for Tunisia, the data are overestimated; for Egypt, Morocco, Algeria, Kuwait, Libya & Saudi Arabia, the data are underestimated for partial; for Oman & Mauritania, the data concern FTE researchers at government universities; for Yemen, the data exclude FTE researchers at government universities.

Source: UNESCO Institute for Statistics database, July 2010; for Mauritania, Oman, Qatar and Yemen: Saleh (2008) S&T indicators in the Arab States.

Number of Publications per million inhabitants (2010)



Source: Thomson Reuters (Scientific) Inc. Web of Science. Science Citation Index Expanded, compiled for UNESCO by the Observatoire des Sciences et des techniques for population data; World Bank (2010) World Development Indicators.

% of World Contribution for Scientific Articles

UNESCO Report 2009

| Country | % |
|---|--------------|
| USA | 30.8 |
| Japan | 8.2 |
| UK | 7.9 |
| Germany | 7.2 |
| France | 5.7 |
| Israel | 1.1 |
| Egypt | 0.3 |
| Saudi Arabia | 0.1 |
| Lebanon | 0.04 |
| Morocco, Algeria, Libya, Tunisia | 0.03 |
| Jordan, Syria | 0.02 |
| Bahrain | 0.01 |
| Yemen, Oman, UAE | 0.008 |

Scientific Articles Published in the Arab World in 2008

Institute of Scientific Information (ISI)

| Country | Number of Research |
|-----------------------|--------------------|
| Egypt | 3459 |
| Saudi Arabia | 1715 |
| Lebanon | 1563 |
| Jordan | 959 |
| Syria | 224 |
| Qatar | 138 |
| Iraq | 100 |
| Libya | 81 |
| Palestinian Authority | 63 |

Number of Patents registered in some Countries

USA Patents Office 2008

| Country | 2007 | 1963-2007 |
|-------------|--------|-----------|
| USA | 79,527 | 3,460,775 |
| UK | 3,292 | 126,663 |
| Japan | 33,354 | 692,181 |
| Israel | 1,107 | 15,641 |
| India | 546 | 3,445 |
| South Korea | 6,295 | 50,420 |
| | | |

Number of Arab Patents registered in USA over 10 years (2009)

| ARAB COUNTRIES | PATENTS |
|----------------------|---------|
| Saudi Arabia | 147 |
| Kuwait | 118 |
| Egypt | 116 |
| Lebanon | 73 |
| Morocco | 71 |
| United Arab Emirates | 66 |
| Tunisia | 23 |
| Jordan | 22 |
| Syria | 20 |
| Algeria | 13 |
| Iraq | 10 |
| Oman | 8 |
| Sudan | 7 |
| Qatar | 6 |
| Bahrain | 4 |
| Libya | 4 |
| Mauritania | 3 |
| Yemen | 3 |

Some Challenges Facing Scientific Research

- **Low rates of Expenditure on Scientific Research.**
- **Low outputs of Scientific research (publications and patents).**
- **Adopting the method of transferring and memorizing knowledge rather than getting it through research.**
- **Scientific research of graduate students is rather traditional and does not tackle socio-economic development.**
- **Non-compliance with the implementation of a national policy or a clear strategic plan for scientific research.**

- **Lack of cooperation and coordination among universities as well as lack of exchange of information, experiences, publications and co-research.**
- **Disconnection between scientific research and national sustainable development plans.**
- **Ignoring quality and innovation in promotion requirements at some universities. However the requirements are based rather on spending a specific period of time and submitting specific number of scientific research.**

- **Lack of scientific research activities and its impact on sustainable development.**
- **Fragility of university education systems in general due to its novelty where most universities have been established in the last quarter of the 20th century and at the beginning of the 21st century.**
- **Low quality of education due to the inflation of student number and limited number of available staff members.**

- **Unemployment of research results in economic projects due to weak links between research institutes and production sectors.**
- **Lack of specialized centers for scientific research.**
- **An over –inflated ego in researchers and lack of interaction with team work.**
- **Lack of universities' autonomy, governance and institutional performance.**
- **Weak quality of HE outputs.**

Role of AARU in Supporting Scientific Research

Funding Scientific Research:

- Any worthwhile research must necessarily be based on the following pillars: vision, strategy, logistics, human resources that include well qualified researchers and meaningful research priorities directed towards problem-solving rather than just publishing.
- The Arab world today faces a host of hurdles when it comes to scientific research including a lack of clear focus in research priorities and strategies, insufficient time and funding to meet research goals, low awareness of the importance and impact of good scientific research, inadequate networking opportunities and databases, limited international collaborative efforts, and of course, the brain-drain.

- One of the solutions to meet the challenges is to increase the budget for scientific research, select meaningful priority areas for research, lay down workable strategic goals and action plans, establish adequate databases and networking capabilities, and robustly encourage private sector input and participation.
- In a step to support financing scientific research at Arab Universities, a decision was adopted in March 2012 during the last meeting of AArU in Morocco to launch **The Scientific Research Fund** at the headquarters of AArU. We are working to seek the support of various bodies to make this Fund effective.

The Third Challenge is Brain Drain losses at Arab Universities

- **31% of the total brain drain from developing countries are from the Arab countries, 50% of them are doctors and 32% are engineers.**
- **15% of Arab talents went to Europe and America.**

- **34% of physicians working in the UK are Arabs and Muslims.**
- **75% of the total scientific talent migration in Canada, USA and Britain are Arabs and Muslims.**
- **54% of Arab students who study abroad do not return to their home countries.**

Main Reasons of Brain Drain in Arab Countries

- **Political instability.**
- **Social Injustice.**
- **Absence of appropriate environment to conduct research.**
- **Lack of research facilities and low quality research standards.**
- **Lack of freedoms.**
- **Lack of work motivations and incentives.**
- **Low salaries.**

Achievement in Some Arab countries

Saudi Arabia ranked 7th in higher education •

The **Economist Magazine (2007)** has placed **Saudi Arabia on seventh place** ahead of France, Russia, Italy, Spain, Malaysia and many other countries in the field of higher education and scientific research. This is due to:

- √ The amount of fund spent on students in the field of higher education,
- √ The percentage of allocations for higher education in the general budget,
- √ The total number of external students, and the number of business administration institutes.
- √ The launch in September 2009 of a graduate university in Saudi Arabia, The King Abdullah University of Science and Technology (KAUST), which have ~ US \$ 10 billion endowment – the sixth largest in the world.

The Dubai International Academic City

- √ Includes universities and research & development centres from developing countries, such as India, Iran and Pakistan, as well as industrialized countries, such as Australia, Belgium and the United Kingdom.
- √ US\$10 billion Foundation to narrow 'Arab knowledge gap'
- √ The Mohammed bin Rashid Al Maktoum Foundation support establishing scientific research centres in Arab universities, offer research grants to Arab researchers

Achievement in Some Arab countries

- √ **'US\$1 billion Higher education city' in Bahrain 2010**
to boost for Middle East science
- √ Aims to encourage educational innovation to fill the skills gaps in labour markets.
- √ To include laboratories, an international centre for research, a specialist academy as well as branches of foreign universities
- √ The first Internet-based 'e-University' for Asia and the Middle East.

Achievement in Some Arab countries

- **Qatar. leading university-industry partnership**
- √ **Qatar** has officially opened its **US\$800 million science park**, to attract start-up enterprises in the fields of energy, environment, health sciences, and information and communication technology.
- √ The park has an innovation and technology transfer centre, It encourages the transfer of technology, knowledge and skills to companies, and start-up enterprises.

Thank You for Your Time