

HIGHER EDUCATION & SCIENTIFIC RESEARCH IN THE ARAB WORLD

EURIE

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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 (Morocco 859AD), al-Azhar in Cairo (Egypt, 970AD), Al Mustansiriyah (984 AD) and Al-Koufa University in Iraq and several universities were established in the Andulus area during the ninth and tenth centuries, i.e. Cordoba & Granada. 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 1088AD) and most of them were funded by the Islamic Waqf (Endowment).

- **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. 1805–1849), 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 Americans, 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 and Lebanon.**

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 century, most Arab students used to study mainly at few Arab universities spread in the Arab World in addition to universities in Turkey, Pakistan, India, Russia ,Europe 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 dated from the 19th century, Jordan opened its first private for-profit university in 1990, followed by Egypt, Syria, Yemen, Sudan, Iraq and the Gulf Region.
- At present, there are more than 300 private universities in the Arab World. This represents 40% of the total number of Arab universities . At present, there are more than 700 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, and 22% scientific studies only . In 2013 the number rose to more than 600 universities, around 11 million students and 250,000 faculty members.

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 (Scientific Research Output in the Arab World is very weak and Modest).

4- The cost of a university student in the Arab world is about \$ 3000 a year and it might reach \$ 600 in some countries. In the Gulf countries, the student's cost is between 15000-50000 dollars per year.

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

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 ten 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.

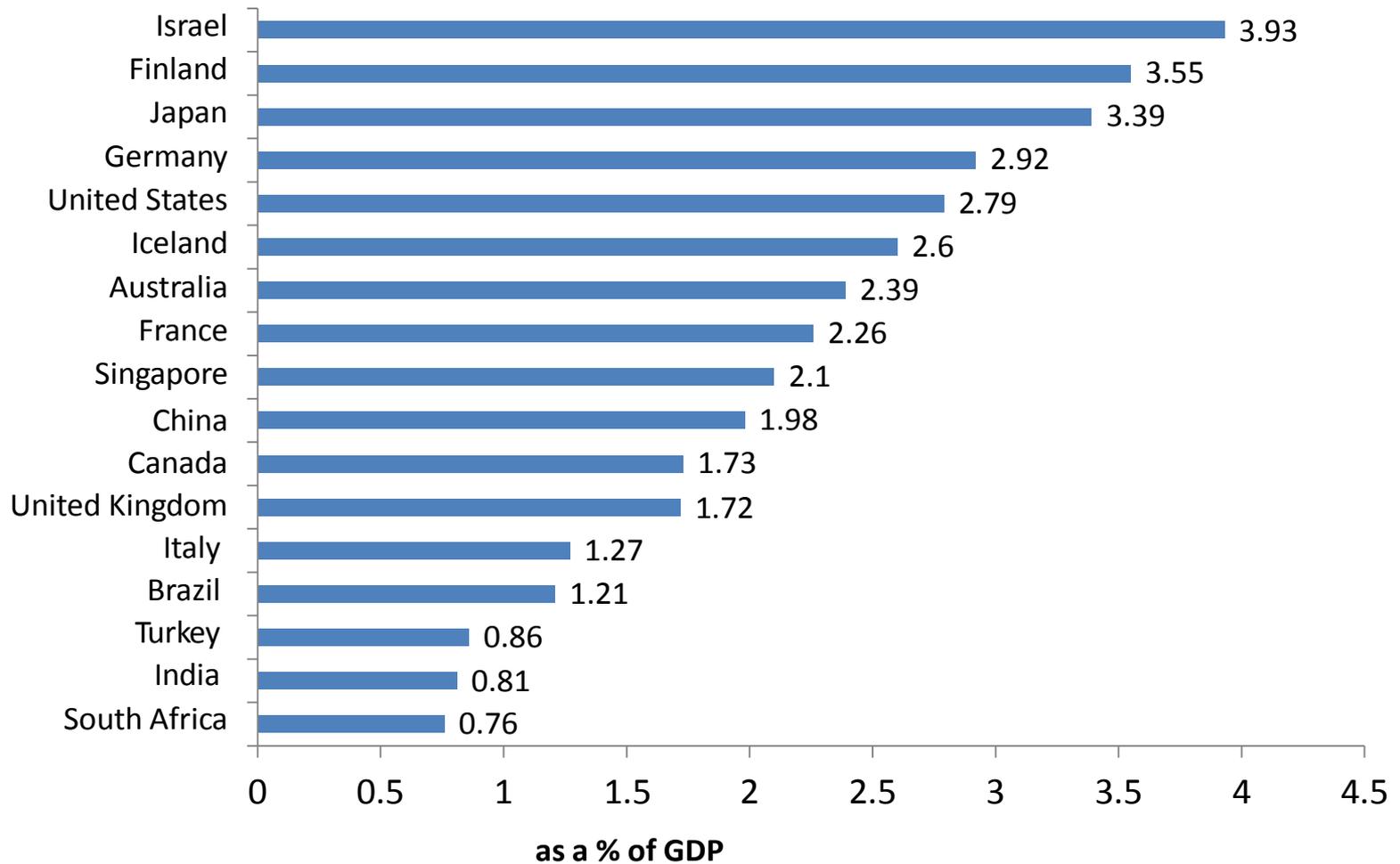
- AArU cooperates and collaborates with national accreditation bodies to discuss and plan together in order to create an Arab umbrella to take the responsibility of quality assurance, while making all efforts with UNESCO and relevant organizations, to give effect to the Convention on the Recognition 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

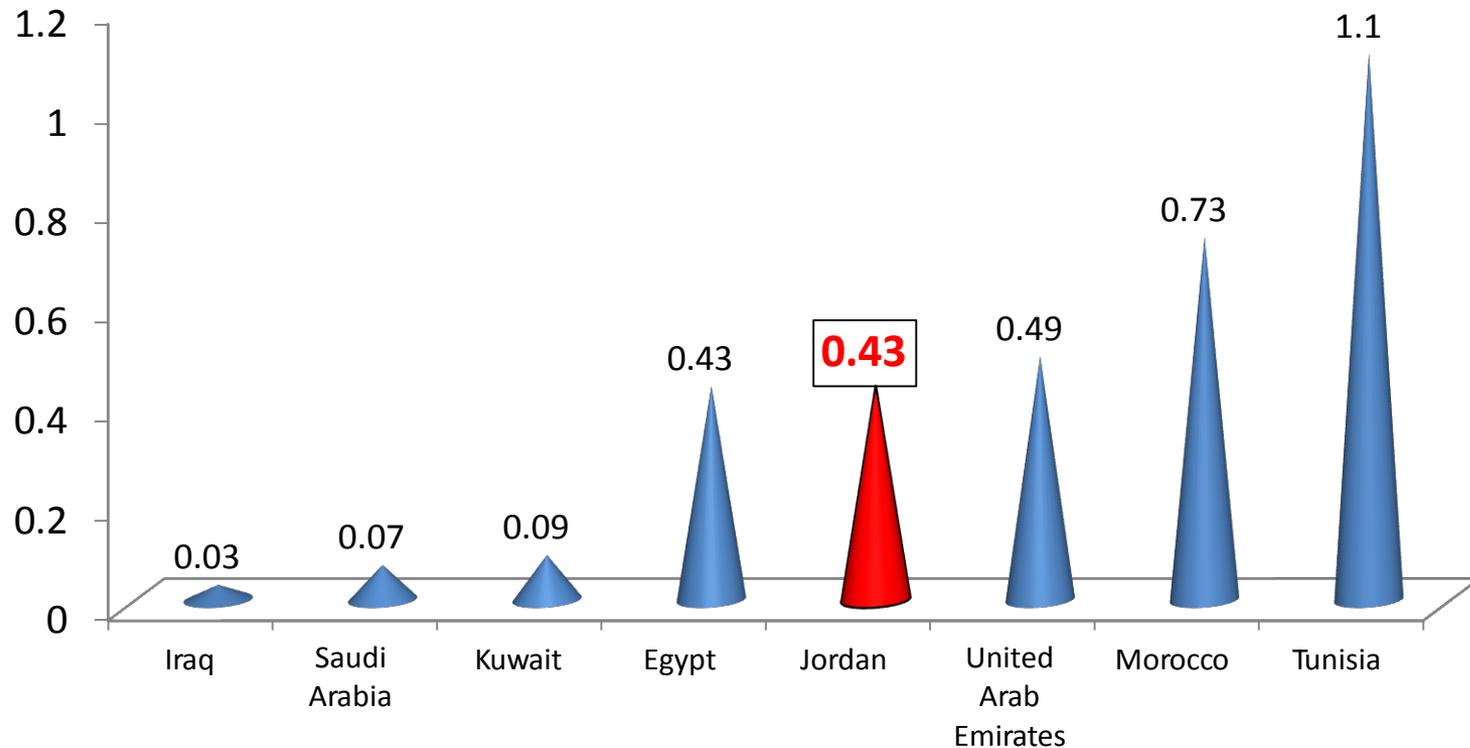
- Arab's expenditures on scientific research are about 0.2-0.6% of the national income GDP, while it is around 2-4% in an industrialized developed countries.**
- The number of researchers per million inhabitants is 500 in the Arab Countries, whereas in the developed and industrialized countries the number is more than 5000 per million inhabitants.**

Expenditures for R&D in **selected countries** 2005 - 2012(as a percentage of GDP)



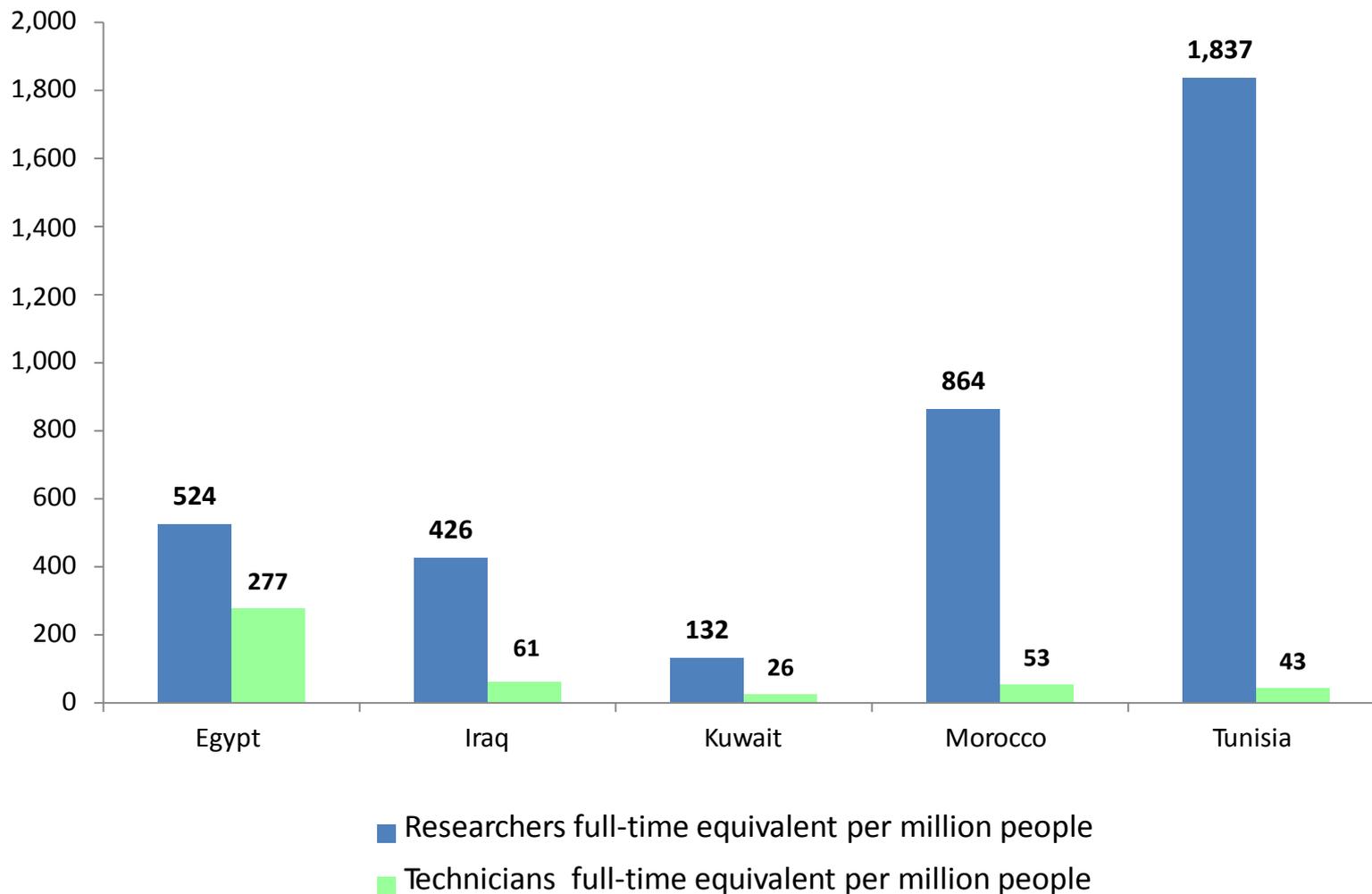
Expenditures for R&D in the Arab World

(as a percentage of GDP) 2005-2012
as a % of GDP



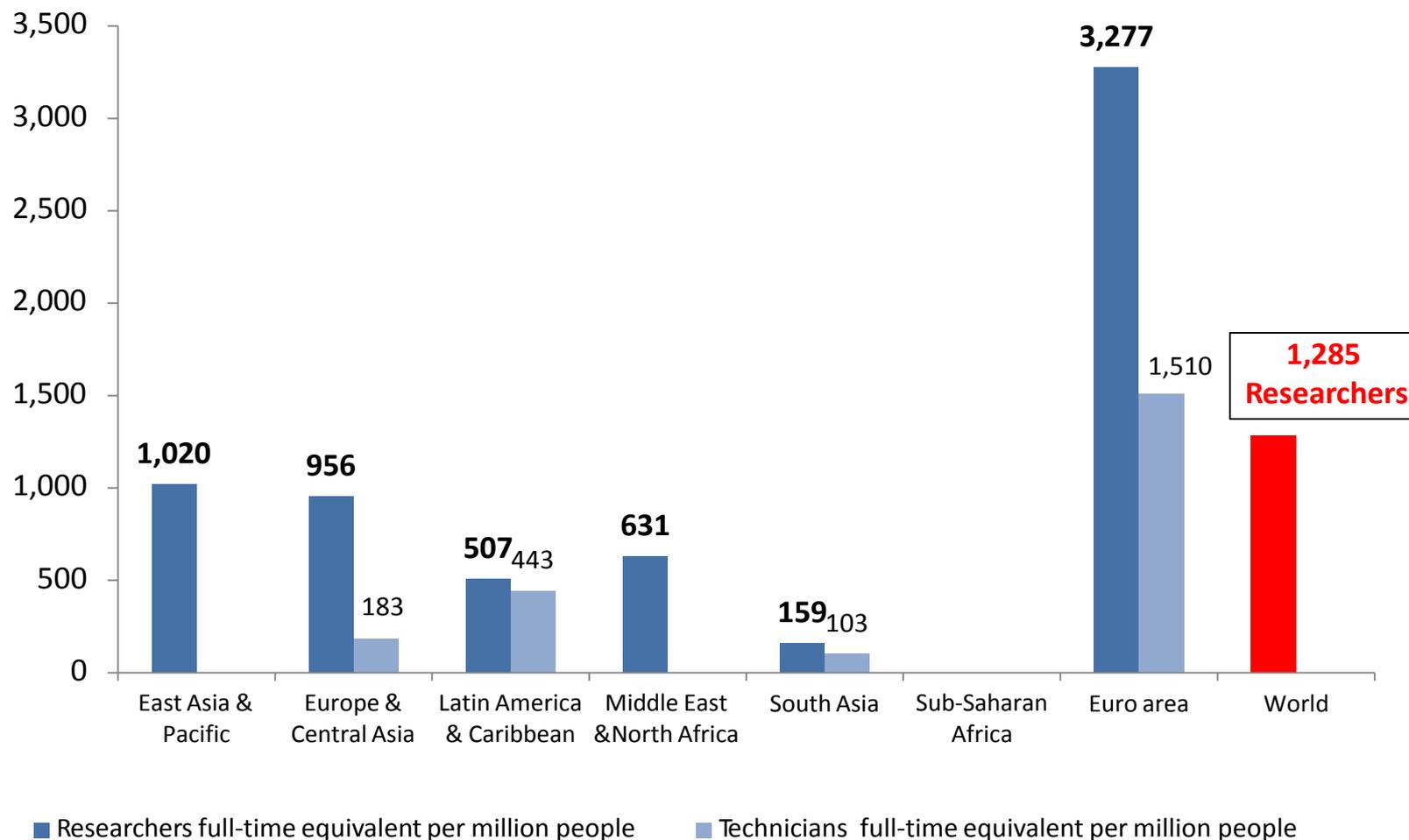
Research and Development (R&D) in the Arab World

Researchers & Technicians (full-time equivalent per million people (2005-2012))

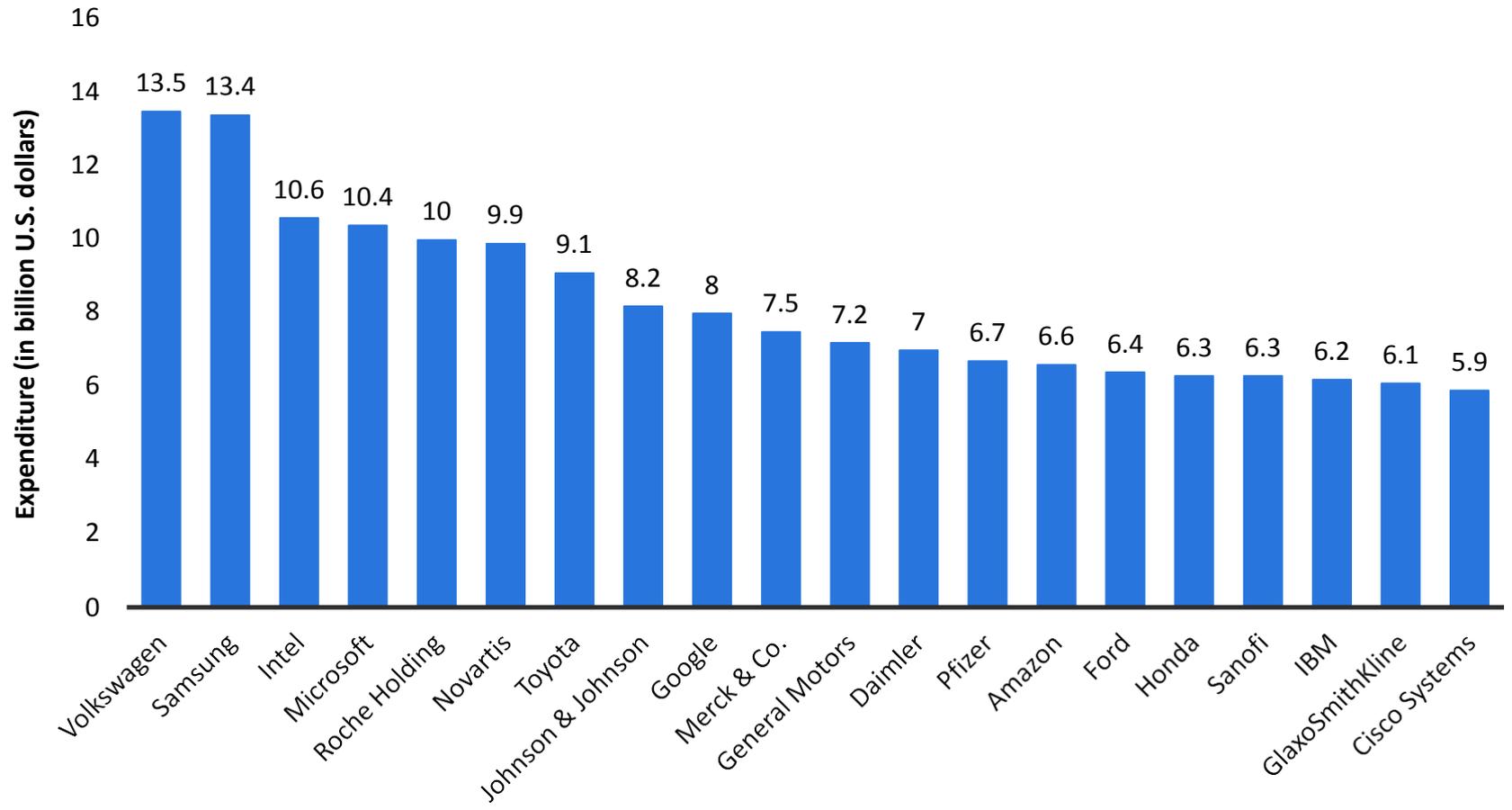


Research and Development (R&D) in **selected regions**

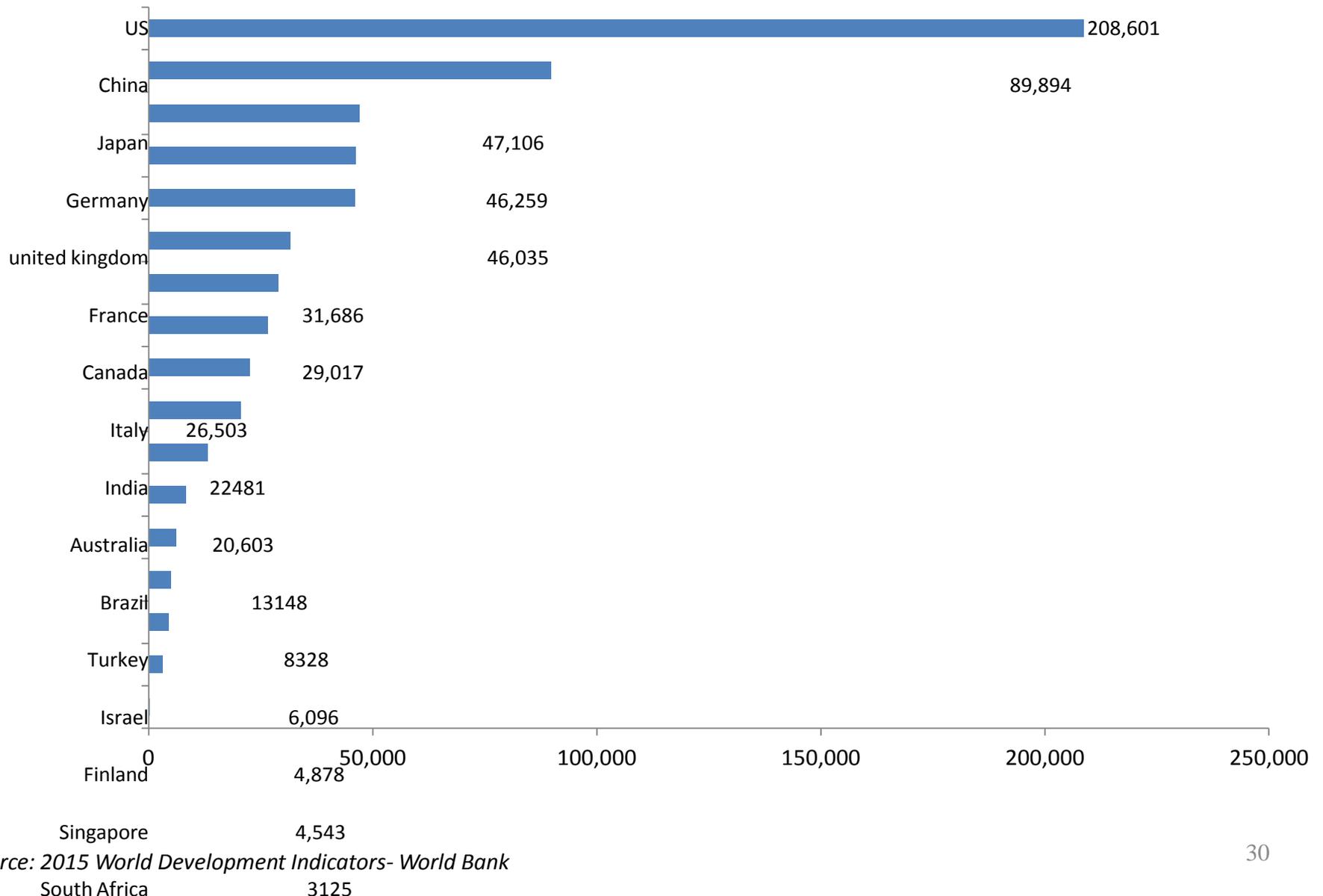
Researchers & Technicians (full-time equivalent per million people (2005-2012))



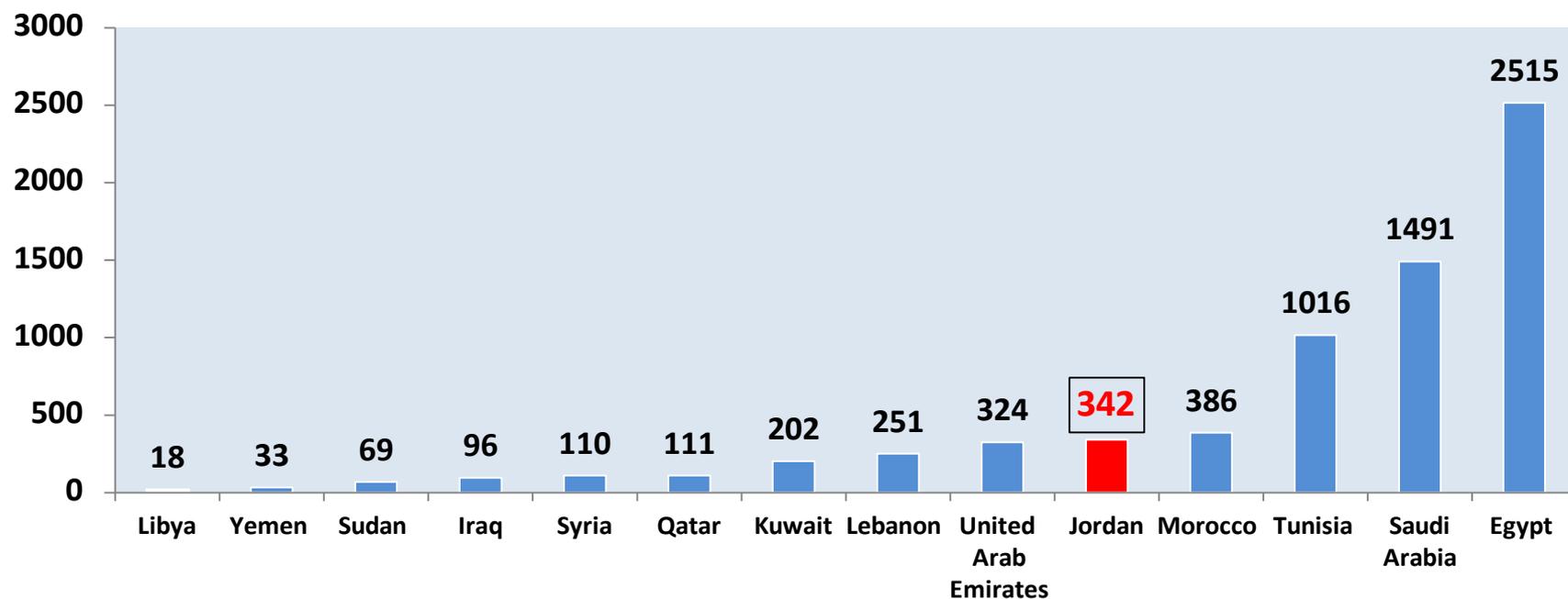
Ranking of the 20 companies with the highest spending on research and development in 2014 (in billion U.S. dollars)



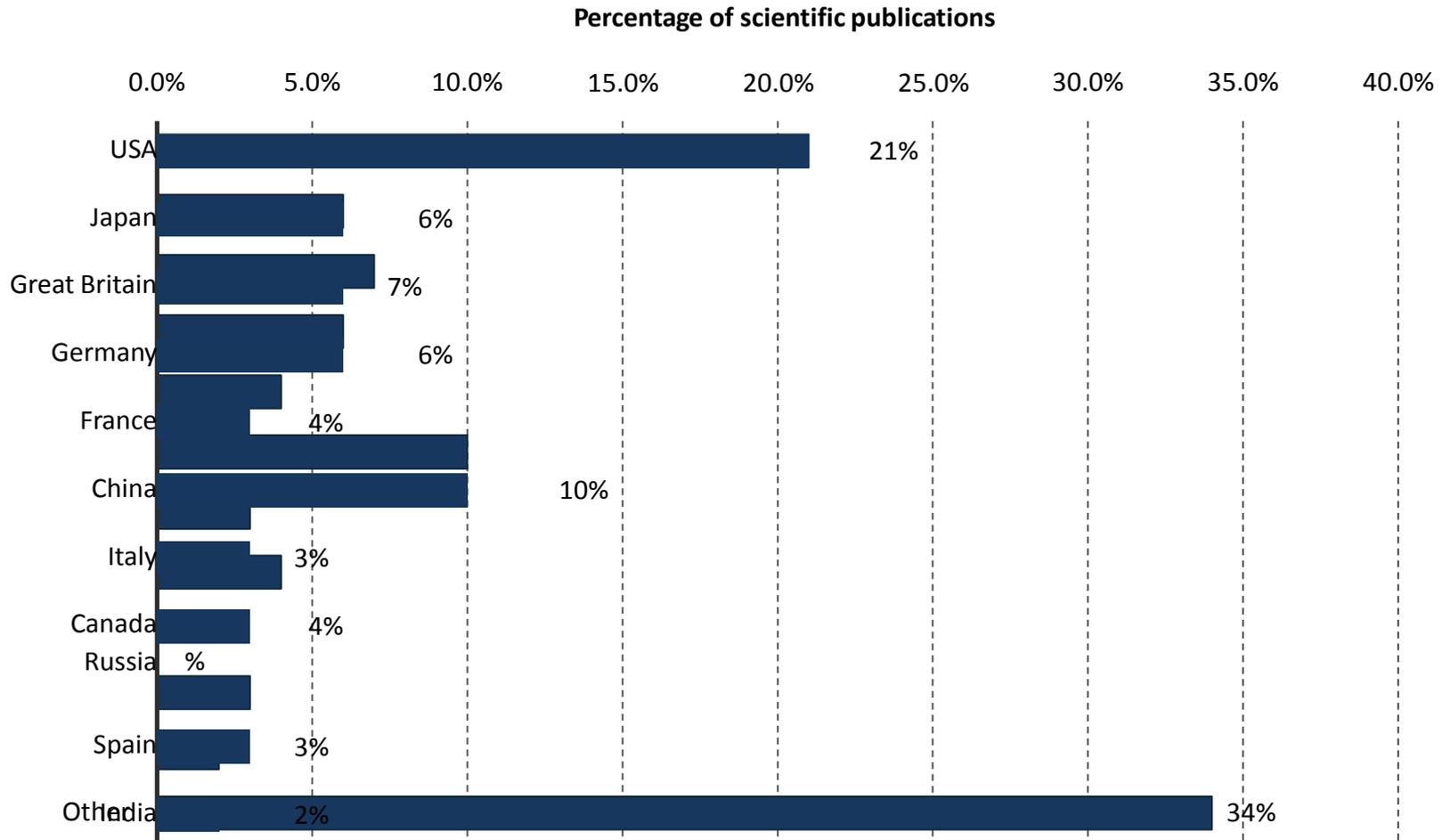
Number of Scientific & Technical Journal articles in selected countries 2011



Number of Scientific & Technical Journal articles in the Arab World 2011



Percentage of worldwide scientific publications by country 2004-2008



Patent Applications filed in 2013: **in selected regions**

	Residents	Non-Residents
East Asia & Pacific	709,185	145,727
Europe & Central Asia	12,983	3,983
Latin America & Caribbean	6,596	44,983
Middle East & North Africa	12,571	4,137
South Asia	11,229	33,592
Sub-Saharan Africa
Euro area	82,521	20,358
World	1,624,969	770,304

Source: World Intellectual Property Organization (WIPO), WIPO Patent Report: Statistics on Worldwide Patent Activity. The International Bureau of WIPO assumes no responsibility with respect to the transformation of these data.

Patent Applications filed in the Arab World 2013

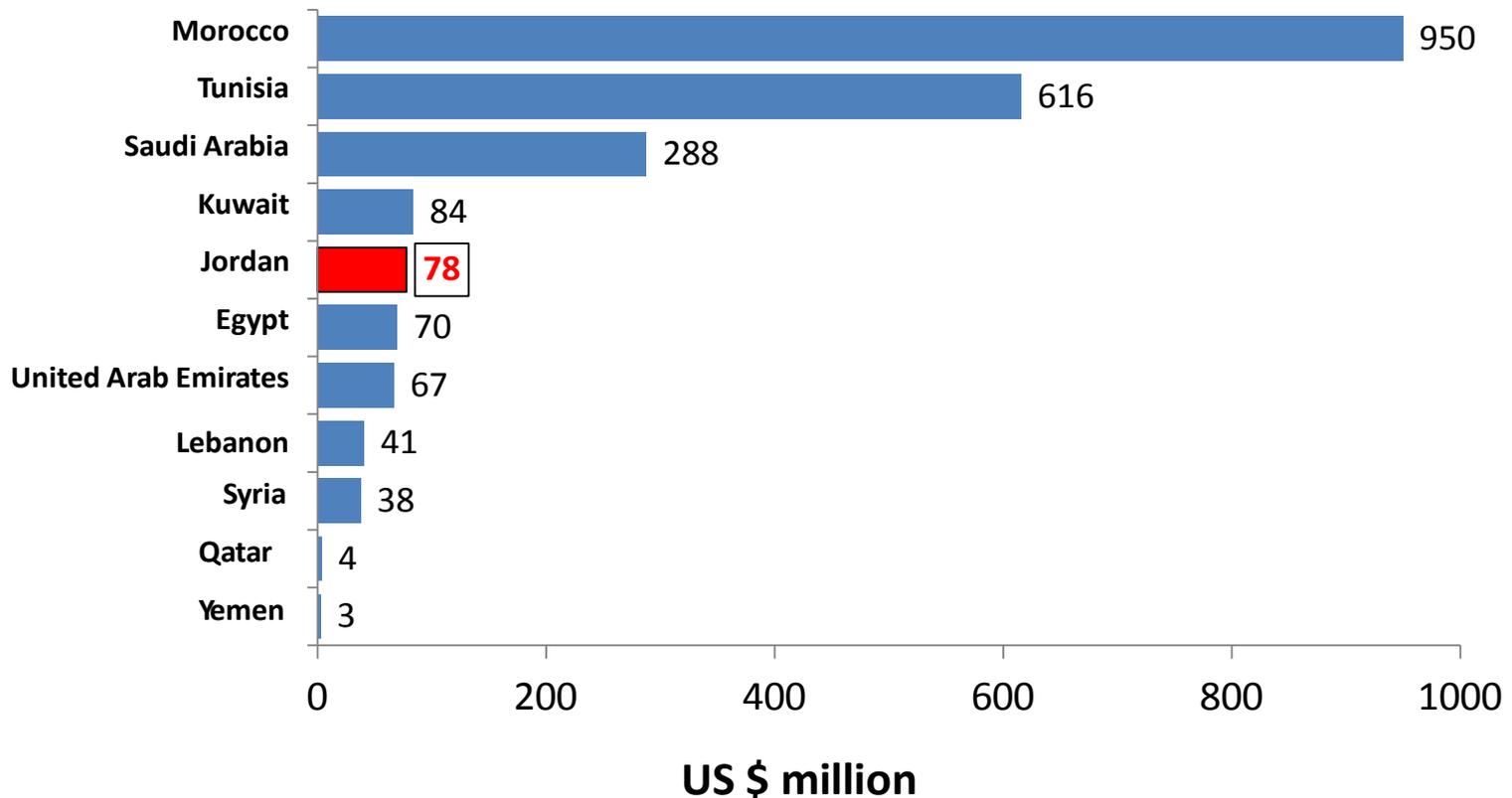
	Residents	Non-Residents
Egypt	641	1,416
Jordan	35	357
Morocco	316	828
Qatar	9	323
Saudi Arabia	491	440
Tunisia	112	437
United Arab Emirates	18	1,408
Yemen	43	37

Source: World Intellectual Property Organization (WIPO), WIPO Patent Report: Statistics on Worldwide Patent Activity. The International Bureau of WIPO assumes no responsibility with respect to the transformation of these data.

High – technology exports in the Arab World

US \$ million 2013

High technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. Data are in current U.S. dollars



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 around 170,000 studying abroad.
- √ More than 20 Saudi Universities were established during the last seven years.
- √ 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.

Dubai International Academic City

- √ Includes universities and research & development centers from developing countries, such as India, Iran and Pakistan, as well as industrialized countries, such as Australia, Belgium, France, United Kingdom & USA.
- √ 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

Bahrain

- √ **'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, international centers for research, a specialist academy as well as branches of foreign universities**
- √ **The first Internet-based 'e-University' for Asia and the Middle East.**

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- **Qatar: leading university-industry partnership**

- √ **Qatar Foundation: bringing university branches from high quality International Universities.**
- √ **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 center, It encourages the transfer of technology, knowledge and skills to companies, and start-up enterprises.

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 has organized and 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..**

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

(4) AArU has organized the 2nd Arab-Euro Conference on Higher-Education (AECHE) at Princess Sumaya University for Technology, in Amman, during 10-12 June 2014, this conference was jointly organized by AArU, University of Barcelona and the European Universities Association (EUA). More than 250 Presidents, Rectors and Vice Chancellors attended this important event.

(5) AArU has organized an Arab German Conference on Higher Education, hosted by Chemnitz Technical University in Germany in October 2014. The conference opened doors for collaboration in master and doctoral programs by offering scholarships to distinguished students from Arab universities.

(6) AARU has organized the Arab-Chinese Conference on Higher Education in the province of Ningxia/China in September 2015, attended by more than 120 Rectors and Presidents from China & the Arab World. AARU will organize the first Arab-French Conference on Higher Education in Paris next June.

(7) AARU will organize the first Arab-French Conference on Higher Education in Paris next June.

(8) AARU will organize the second Arab-Turkish Conference on higher education during April 2016 In Istanbul/Turkey.

(9) AARU will organize the third Arab-Euro Conference on higher education during May 2016 in Barcelona /Spain.

**Thank You
For Your
Kind Attention**