

## Impact of Internationalization on Arab Higher Education The Role of Association of Arab Universities

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### Abstract

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Higher education, deeply rooted in the history of the Arab world, is going through an epoch of transition and transformation characterised by poor quality and fragmentation. Universities have endured a series of setbacks manifested in the destitute state of scientific research. Evidence on the performance of Arab higher education show limited impact on socio-economic development. The concept of internationalisation of higher education and how this may present a small window in the path towards modernizing higher education, reforming universities and empowering research and development is described. The Association of Arab Universities has played a pivotal and vital role in the internationalisation of Arab higher education through numerous activities and initiatives that are presented and discussed as a vehicle of dialogue and interlocutor amongst the academic community and political leadership and the elite.

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**Keywords:** Arab Higher Education, Universities, Scientific Research, Internationalisation

### Introduction

Civilizations rise and fall through the windows of knowledge. Arab civilization reached its pinnacle when its leaders placed value in creating new knowledge and ensured liberty of mind as the pillar for progress and advancement. Today, the Arab world faces daunting challenges of reducing the knowledge chasm with the rest of the world in many fields of endeavor (Zewail 2011). The modern history of education reform in the region is a tale of ambition and accomplishment but falling short in achieving socio-economic development (El Baz 2007). The gap between ambition and reality is continuously widening up as schools, universities and education systems stumble in the road to meet and achieve current and future development objectives. In addition, Arab countries continue to lag behind many comparator countries since the link between education and economic growth and poverty reduction is weak. Elevation of education has become an imperative matter of urgency which must top national priority issues throughout the Arab world.

On the other hand, analysis of the scientific landscape in the Arab world depicts an even gloomier image. Such analysis usually focuses on economic dimensions, and in some cases coupled to political elements such as lack of freedom, weakness of democratic mechanisms and domination of pre-modern administrative patterns in scientific institutions. However, cultural problems encountering the Arab world must be deeply analyzed from a historical perspective in order to identify the enormous impediments that hinder progress and advancement of Arab science, society and nation (Ghassib 2010). In particular, the counterrevolution mind, which dominated Arab culture since the middle ages, casts a heavy blow to all social fabrics including economic, political and administrative environments and structures. The prevailing conditions urgently demand renewal and require revitalizing a new scientific culture which composes the basis of an effective and influential future knowledge industry. Major fundamental reform of higher education has become a top priority in the quest to fulfill the aspirations of future generation and modernize Arab countries.

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Thus, immediate actions are called for to create a schema to essentially initiate a process of translating the perception of science as a historical cultural project into a national collective consciousness (Ghassib 2010)). In this paper, the state of Arab universities and higher education as well as scientific research is described. Light is then shed on the concept of internationalisation of higher education and how this may present a small window in the path towards modernizing higher education, reforming universities and empowering research and development. The Association of Arab Universities has played a pivotal and vital role in this cause through numerous activities and initiatives that are presented and discussed as a vehicle of dialogue interlocutor amongst the academic community and political leadership and the elite.

### **History of Arab Universities**

Arab universities date back to the eighth century when Al-Zaytounah University was first established as a mosque in Montfleury, Tunisia in 737 (modernized in 1956) and consequently became a centre for theology and religious studies. It currently consists of two Islamic Civilization centres, one in Tunis and the other in Kairouan. Bayt al-Hikma (The House of Wisdom) was another major intellectual center founded as a library by the Abbasid Caliph Harun al-Rashid around year 800 in Baghdad and culminated in prominence under his son al-Ma'mun who is credited with its formal institution which then became a center for translation, and transformed later into a center for scientific research and composition. In addition, the first known continually operating non-profit private university was founded by Fatima al-Fihri in 859 in Fez, Morocco as al-Qarawiyyin mosque and its associated madrasa, and today represents the oldest existing degree-awarding educational institution in the world. In 1963, University of al-Qarawiyyin was credited as a modern higher education institution and incorporated into the state system.

In Egypt, Al-Azhar University was founded in 970-972 by the Fatimids as a centre of learning of Quranic and Islamic law, Arabic, rhetoric and logic. In 1961, additional non-religious subjects were added to its curriculum while still stands today as a prominent centre of Arabic literature and Islamic learning in the world. Mustansiriya University in Baghdad is another scholarly example of historical Arab universities. It originates to Mustansiriya Madrasah that was established in 1227 by the Abbasid Caliph Al-Mustansir on the bank of Tigris River. In 1963, the modern Mustansiriyah University was re-established to mainly provide evening courses, and a year later given the status of a semi-state institution and then moved to a new campus to the north of the city centre and converted into a public university in 1968 (Hanafi and Arvanitis 2015).

Higher education is thus deeply rooted in the history and societies of the Arab world, some of which were the first established universities in the world with endowment funding or Islamic Waqf. They had actually initiated an intellectual movement which nurtured the subsequent flourishing of world knowledge and scholarship and established and disseminated educational standards that are still applied in present-day universities. Arab higher education has however experienced a state of slackness and paralysis with the decline of Arab-Islamic civilization that was marked by foreign invasions, occupation and colonization and internal political and religious turmoil, struggle and fragmentation. For almost seven centuries, Arab higher education had witnessed a state of demise and termination during which science and education have taken a back seat and Arabs went away from science. This dark era has persisted until the mid-nineteenth century when the American Board of Commissioners for Foreign Missions established a college of higher learning in Beirut named the Syrian Protestant College in 1866, and consequently renamed the American University of Beirut in 1920. The foundation of the Université Saint Joseph in Beirut followed in 1875 by the French Jesuit Mission. In the same year, Université La Sagesse was established in Beirut by Archbishop of the Maronite Archdiocese in order to lead the adventure of a cultural revival through teaching civil law and Islamic Fiqh.

Qasr El Eyni hospital, on the other hand, may be considered as the nucleus of present-day University of Cairo. Muhammad Ali, the Viceroy of Egypt, reorganized it in 1827 as a resumption of a hospital built by Napoleon for his troops in 1799. The Viceroy has actually relied on and recruited doctors from Europe to manage and maintain the hospital in order to keep his army in good health. University of Cairo itself was first established as the Egyptian University in 1908 until 1940 and King Fuad I University between 1940 and 1952, when the Egyptian revolution toppled the monarchy. University of Khartoum, on the other hand, was founded under then name Gordon Memorial College. It was built between 1899 and 1902 as part of Lord Kitchener's educational reforms and named in honour of General Charles George Gordon, the British army officer who was killed during the Mahdi uprising in 1885. The college was renamed again in 1956 to University of Khartoum when Sudan gained its independence.

Similarly, the University of Algiers stemmed out of 4 higher education institutions created in 1879, by the university reform of the French Republic for medicine-pharmacy, sciences and law, in order to train the Muslim cadres of religion, justice and administration under Islamic law. The four schools or faculties were then transformed into the University of Algiers under the Law of 1909. It allowed students to pursue a complete curriculum up to the doctorate. Most students initially came from European families installed in North Africa.

In Lebanon again, the American School for Girls was established in Beirut in 1835 by American Presbyterian missionaries as an important shift in education for women in Syria and the surrounding region. After a sectarian conflict in 1860, it was renamed Beirut Female Seminary and subsequently undergone some difficult transformations, including occasionally shutting down, before reverting to its original name in 1868, and becoming a popular school for women which included secondary education. In 1924, the school started a two-year junior college curriculum that was mandatory at the time for young women wishing to pursue bachelor's degrees at AUB, and in 1933 it moved to what is now Lebanese American University. Meanwhile, the Lebanese Academy of Fine Arts was originally a stand-alone Lebanese institute, founded in 1937 by a group of young classical musicians and now one of the faculties at the University of Balamand established in 1988. Furthermore, the Middle East University was established in Beirut in 1939 as a higher-education institution operated by the global Seventh-day Adventist denomination, and granted accreditation in 1949, formally named Middle East University in 2001.

In Syria, Damascus University was founded in 1923 through the merger of the School of Medicine which was established 1903 and the Institute of Law established 1913. It was first named the Syrian University, but the name changed after the founding of the University of Aleppo in 1958. Meanwhile, in 1938, two faculties of Arts and Law of then the Fouad the First University formed the nucleus of the Alexandria University, which became a separate entity in 1942 with four additional faculties: Science, Commerce, Medicine and Agriculture. In brief, only 5 Arab countries had universities prior to the twentieth century and only 10 Arab universities existed before the Second World War.

### Arab Higher Education Landscape

With independence of Arab countries, higher education institutions and student enrollment quickly multiplied and public state-run institutions and universities were largely dominating the landscape (Kidar 2017). Reform in Arab higher education began in the early 1980s and continuing today, including increasing privatization, greater access, fulfilling needs and demands of society, matching educational “outputs” with labor market needs, and negotiating a competitive global education market. During the last twenty five years, the number of universities in Arab countries has increased rapidly to over 700 universities, as shown in Fig. (1), with more than 250 private ones representing 50% of the total, while student enrollment has now exceeded 10 million and the number of faculty members reached 350,000. Detailed statistics on higher education in the Arab world for the year 2014 are shown in table (1).

Arab human development called for a radical revision of education systems and declared poor quality as the Achilles heel of education in the Arab world (Masri and Wilkens 2011). The report also called for urgent action in three broad areas, including enhancing human capabilities, creating strong synergy between education and socio-economic system, and formulating a programme for education reform at the Pan-Arab level. The latter is in fact a major problem facing Arab higher education with almost complete absence of cooperation between Arab states and no solid initiatives for Inner-Arab cooperation which foster student and staff exchange, encourage joint postgraduate programmes or address research problems common to the region.

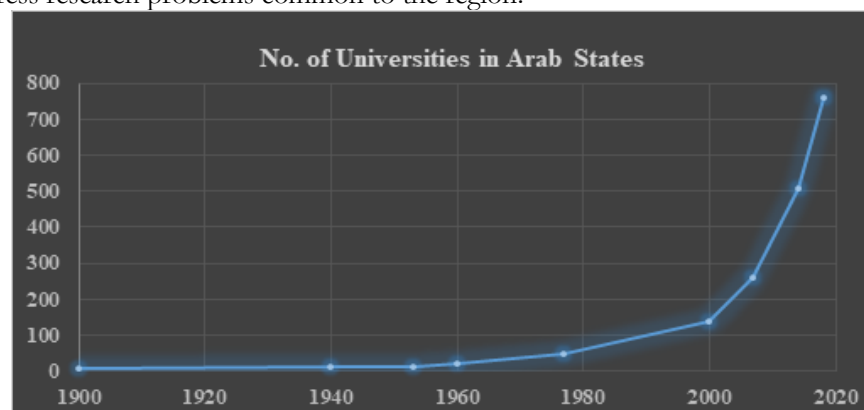


Fig. (1) Growth of Arab universities since the beginning of 20<sup>th</sup> century.

**Table (1): Statistics on higher education in the Arab world for the year 2014.**

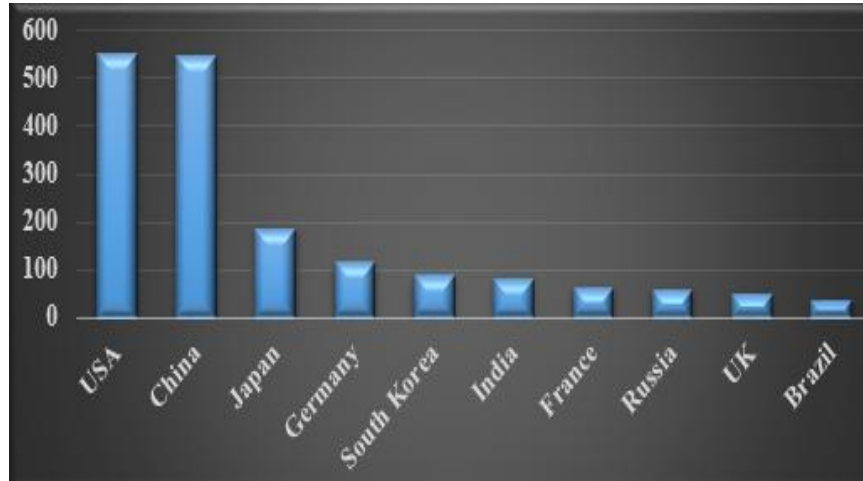
Country	Universities			Colleges and HE Institutions	No. of Students	No. of Faculty Members
	Public	Private	Total			
Algeria	48	2	50	56	1500000	20500
Bahrain	3	13	16	-	34388	1670
Egypt	24	19	43	82	2550000	92000
Iraq	40	2	42	49	596319	32000
Jordan	11	17	28	3	340000	9558
Kuwait	1	8	9	9	55389	2200
Lebanon	1	32	33	17	225000	20082
Libya	14	6	20	-	400000	12784
Mauritania	1	7	8	5	18500	650
Morocco	15	4	19	-	623375	12700
Oman	1	7	8	16	120000	4890
Palestine	3	11	14	36	275587	7500
Qatar	1	7	8	-	29226	1200
Saudi Arabia	26	10	36	32	1357702	64689
Sudan	32	11	43	105	726894	14830
Syria	6	20	26	4	650000	12500
Tunisia	13	18	31	168	439619	24878
UAE	4	29	33	49	104838	3180
Yemen	10	30	40	7	334752	11800
<b>Total</b>	<b>254</b>	<b>253</b>	<b>507</b>	<b>683</b>	<b>10,381,589</b>	<b>349,611</b>

Despite over a decade of dramatic achievement, reform and expansion, higher education in the Arab world continues to fall far short from fulfilling the needs of society and to meet the growing demands of Arab youth. In addition to being relatively new with 75% of Arab universities established since 1975, higher education institutions suffer from a lack of clear vision and well-designed educational missions. In addition, most Arab universities lack key human and physical resources and suffer from overcrowding and poor quality. Moreover, the Arab educational system is currently producing graduates with skills and competences that do not match the needs to succeed in the modern global economy as reflected by high unemployment among university graduates. The quality of Arab higher education has not kept pace with international standards. This dual challenge of quantity and quality requires a comprehensive reform agenda for the higher education system to address the skills gap, fuel economic development, and put the region on better footing for advancement and competition in a technologically driven, knowledge-based world. They also lack autonomy as they are under direct control of various authoritarian regimes. This leaves minimal room for freedom for curriculum, expression, research, original thought and publications. In fact, Arab universities are not knowledge production centres but rather a merely transmission of what is already known. The early spirit of Arab researchers of the middle ages has almost disappeared. Strong political will to revive research culture and spirit is called upon. Arab governments should trust and count on the educational sector to open up their societies and enable them cope and keep abreast with the latest pedagogical, scientific and technological advancement to achieve socio-economic progress. In brief, Arab higher education still has a critical role to play as the engine of social and economic progress particularly in restructuring itself and breaking free from the obstacles that have held back meaningful educational changes in the past.

### Research in the Arab World

The importance of scientific research for the development of countries and nations cannot be overemphasized. According to the UNESCO Science Report: Towards 2030, the world spent 2.228% of its total GDP on research and development in 2015. In fact, global spending on R&D has reached a record high of almost US\$1.78429 trillion with only 10 countries, as shown in Fig. (2), which account for 80% of spending. The leading countries on R&D are characterised by their strong spending by the business sector which is truly an underlying factor for success.

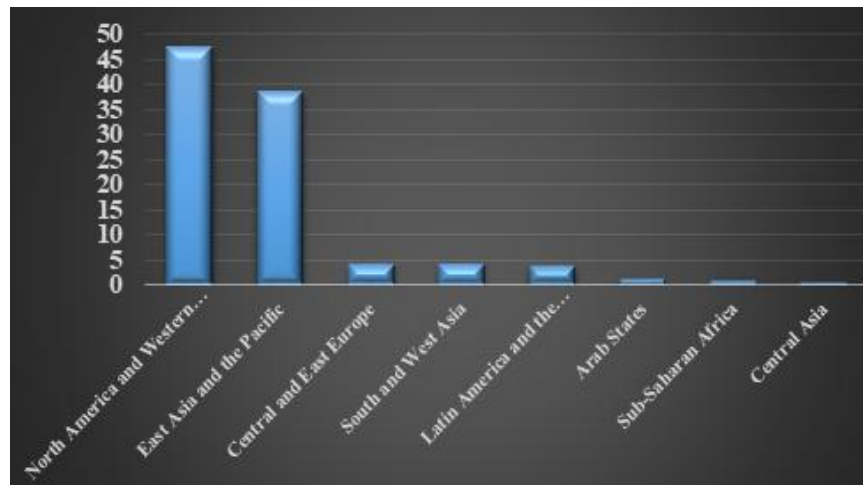
Countries all over the world must commit and pledge to substantially increase public and private R&D spending as well as the number of researchers in order to sustain and achieve national development goals. Furthermore, several countries currently try to stimulate greater investment in both the private and public sectors by setting national targets for R&D spending as a share of GDP.



**Fig. (2) Leading countries by gross R&D expenditure in 2018 (in billion U.S. dollars).**

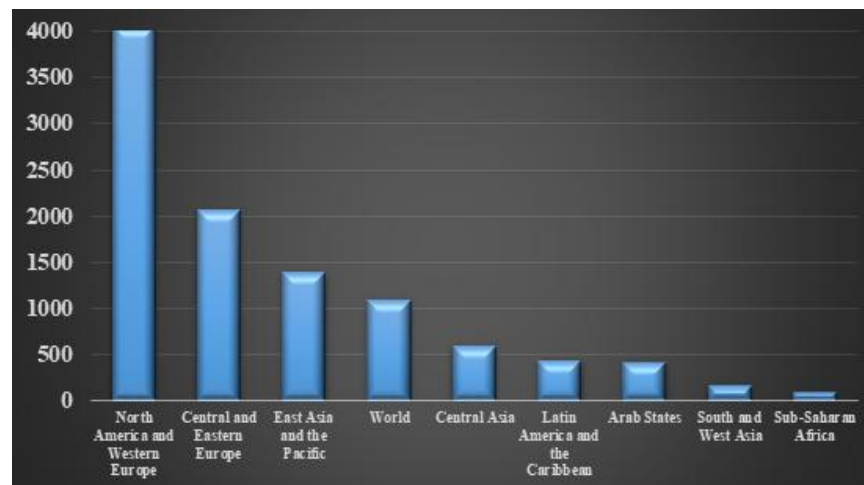
Fig. (3) presents the percentage distribution of researchers across the world by region for the year 2014, with North America and Western Europe having the greatest share of 47.5%, followed by East Asia and the Pacific 38.6%, then Central and East Europe 4%, South and West Asia 4.2%, followed by Latin America and the Caribbean 3.6%, Arab States 1.1%, Sub-Saharan Africa 0.8% and finally Central Asia 0.2%.

The share of Arab states is in fact much less than what it should produce in accordance with its population which stands at 5.2% of the world population. The Arab world should therefore generate 5 times the current magnitude of research in order to commensurate its poor level and to reach world average.

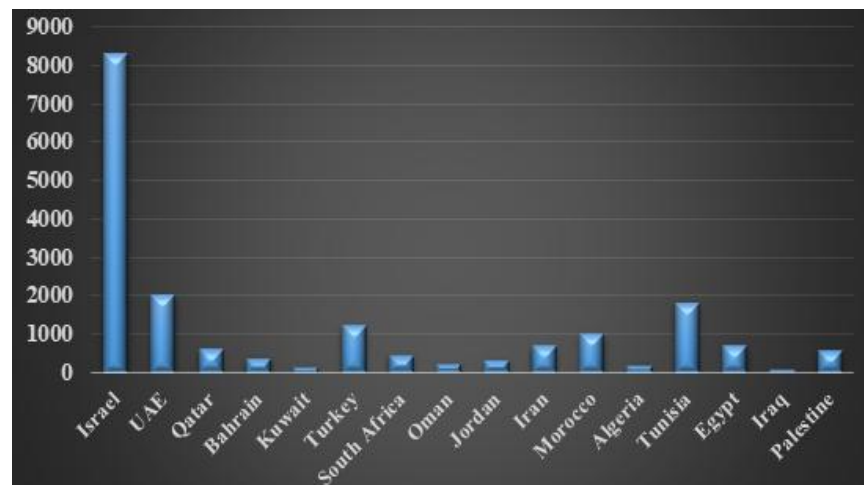


**Fig. (3) Distribution of researchers across the world by region in 2014.**

The number of researchers per 1 million inhabitants by region for the same year 2014 is shown in Fig. (4), while the same indicator for Arab and some other emerging countries in the region is shown in Fig. (5).



**Fig. (4) Researchers per 1 million inhabitants by region, 2014.**



**Fig. (5) Researchers per 1 million inhabitants in Arab and other emerging countries, 2014.**

It is clearly visible that Israel is leading all other countries in this indicator. In fact, Israel leads the world in the number of researchers per 1 million inhabitants. Israel also leads the world on its expenditure on R&D as it spends 4.3% of its GDP in scientific research with actual amounts of purchasing power parity 12,263.5 million, with \$10.395 billion coming from business, \$215.5 million from government, \$1,504.2 billion from universities and \$148.7 million from private-non-profit

Scientific production in the Arab world in particular has been rapidly transforming over the last decades and several countries gained a good share of scientific contribution and number of documents produced and cited. Several studies highlighted the rapid growth in this scientific production over time and its relative prominence when compared to the total production of documents in the region and worldwide (Cavacini 2016). Such studies are vital and invaluable tools in enlightening leaders and policy makers to improve the research and scientific production in Arab countries that fall well below the world average, and to create new alliances with leading and emerging countries.

However, science policy analysts need appropriate tools to monitor the state of publications and to roughly categorize scientific development, progress and make comparisons with other countries. Scopus raw data provided by Elsevier, Thomson Reuters Web of Science, Essential Science Indicators database, all allow measurements of scientific output performance and scientometrics of individual states over long periods of time. The SCImago Journal and Country Rank database was used to extract research data which implements metrics that are calculated using the Scopus raw data provided by Elsevier (Moed 2016). The database allows for measurement of a performance of a single country year by year covering two decades from 1996 to 2016.

The data contained in spreadsheets available online, [www.scimagojr.com](http://www.scimagojr.com), provides information on the number of citable documents published and on citations to such documents. The data available for all 21 Arab countries in the Middle Eastern and North Africa were compare to Iran, Israel, Turkey, and South Africa.

The data analyzed show a general increase in the number of productions for most countries over the last few years as shown in Fig. (6), consistent with the general world trend. Saudi Arabia has emerged as the leading Arab country in scientific publications since 2012, overcoming both Egypt and Israel and just equaling South Africa. However, Turkey and Iran have dominated the region in terms of the volume of publications in the last decade, particularly Iran which has been making steady progress and overcoming Turkey in recent years. In fact, Iran has topped the list in the number of publications in 2016, as compared to the 5 top Arab countries, Turkey, Israel, and South Africa, as shown in Fig. (7).

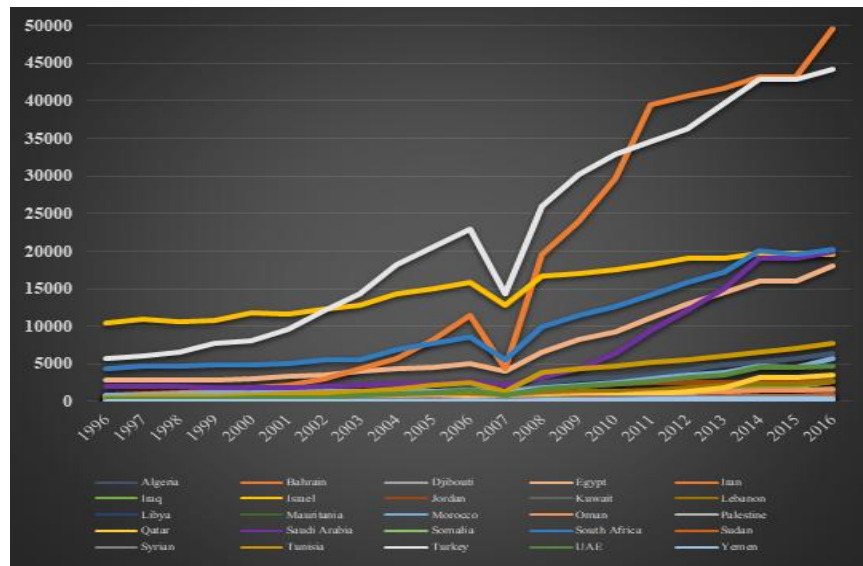


Fig. (6) Number of published documents per country over the period 1996-2016.

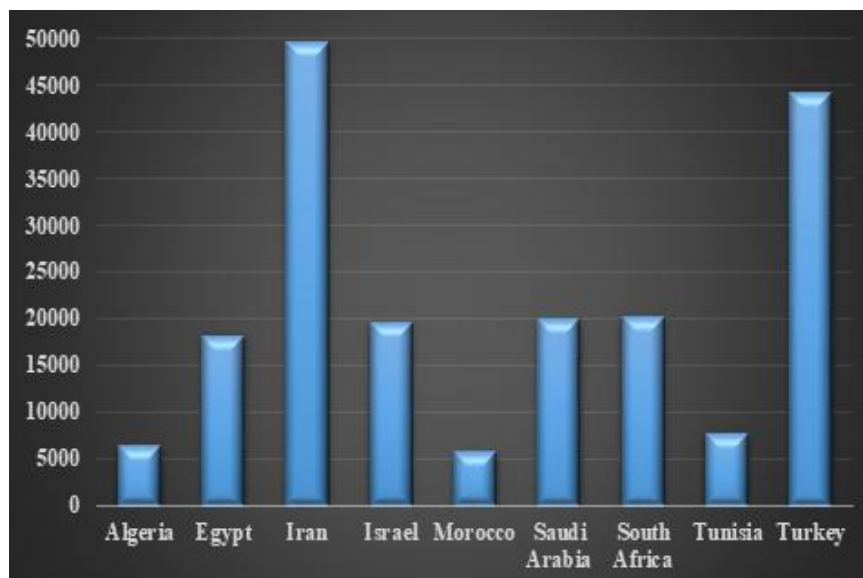


Fig. (7) Number of published documents in 2016 for leading countries.

The same trend is also observed when analyzing the total number of citations per document per country where Iran, Turkey, Saudi Arabia, South Africa, Israel, and Egypt take the lead respectively, with minor differences between the last four, as shown in Fig. (8).

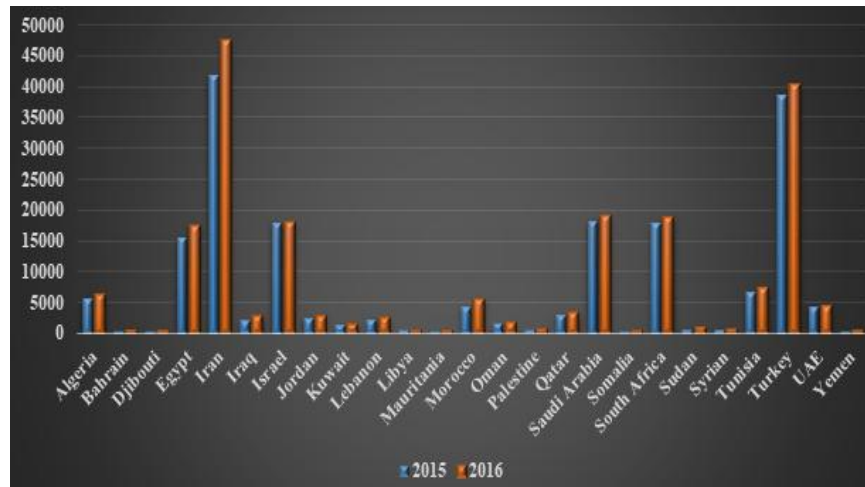


Fig. (8) Total number of citations per document per country for the years 2015, 2016.

This h- index at the country level however tells a different story. Israel actually leads all countries in this indicator standing at 584, followed by South Africa at 361, Turkey at 339, Saudi Arabia at 241, Iran at 234 and Egypt at 213. All other Arab countries have an h-index below 157, as shown in Fig. (9).

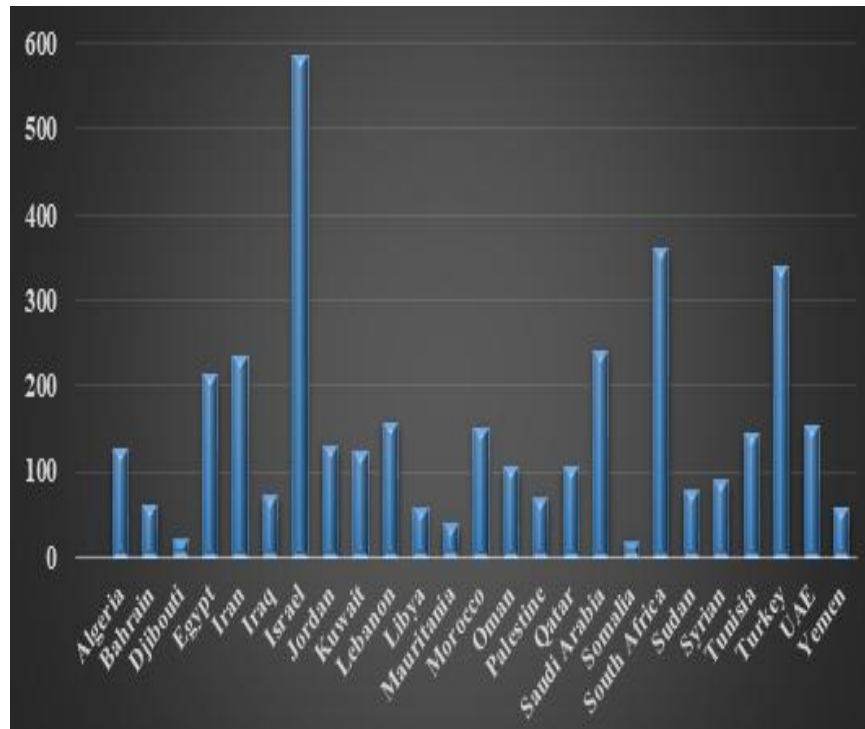
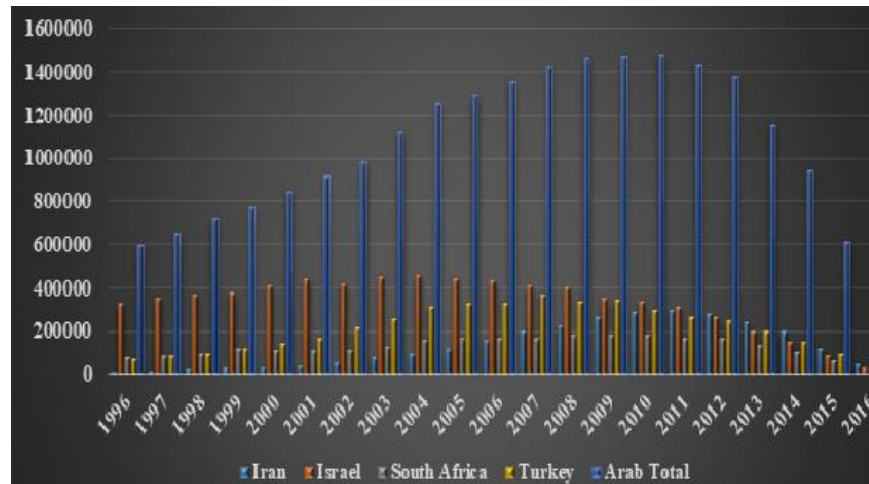


Fig. (9) H-index for 2016 for Arab and neighboring countries.

The analysis shows that Israel remains the region’s leader in scientific research, while Turkey and Iran were in the lead in terms of documents produced, and together with Egypt and Saudi Arabia, were among the emerging countries in scientific production. However, the analysis clearly demonstrates that the state of scientific research in the Arab world remains weak when compared to other emerging economies in the region, and is still to reach world average. There are several challenges that describe this fragmentation and weakness including low rates of expenditure and outputs of publications, absence of national policies or strategic plans, and hence poor impact on sustainable development. However, when scientific production of all Arab countries are put together, the whole situation may reverse as elucidated by the total citations for Arab countries compared to others in the region, as depicted in by Fig. (10).

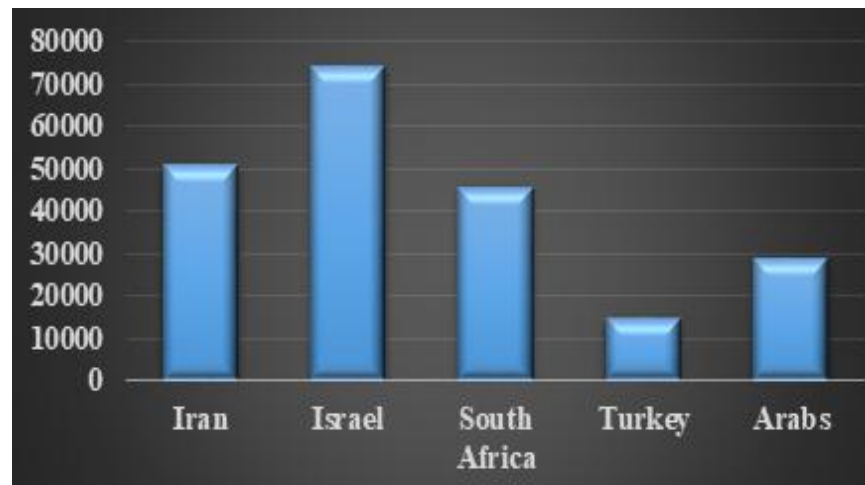




**Fig. (10) Total citations for Arab countries compared to others in the region.**

Furthermore, patent development activity in the region pales in comparison to other countries worldwide, and is reflective on a lack of innovation friendly culture in the Arab world.

According to World Intellectual Property Organization (WIPO) report on “World Intellectual Property Indicators” in 2016, patent applications worldwide grew by 1.9% in 2015 with around 2.9 million patent applications filed across the globe. Driving that strong growth were filings in China, which received about 174,000 of the nearly 208,000 additional filings in 2015 and accounted for 84% of total growth. The next largest contributors were the U.S. and Europe, combined they accounted for 8.6% of total growth. Data extracted from the WIPO statistical databases on the total number of granted patents for residence and non-residence and abroad, for the period 2007-2016, show that Israel leads the race with over 74378 patents, followed by Iran with 50891, South Africa with 46644 and Turkey with 14555. All Arab states have been granted only 28932 in this 10-year period, as shown in Fig. (11), which is less than double the patents granted for Israel or Iran in year 2016 only.



**Fig. (11) Total granted patents in the period 2007-2016.**

The poor commercialization of science in the Arab world is again demonstrated by the indicator on total equivalent count patents by origin of applicant on direct and Patent Cooperation Treaty (PCT) national phase entries for the year 2016 is shown Fig. (12). This time, Iran slightly leads Israel followed by Turkey and South Africa. However, both Saudi Arabia and Egypt are making progress while the rest of Arab states merely produce 26% of that of Saudi Arabia which improved its world ranking to 34 in term of patent applications as shown in table (20). Patent data refer to numbers of equivalent patent applications, mark data refer to numbers of equivalent trademark applications based on class counts and design data refer to numbers of equivalent industrial design applications based on design counts.

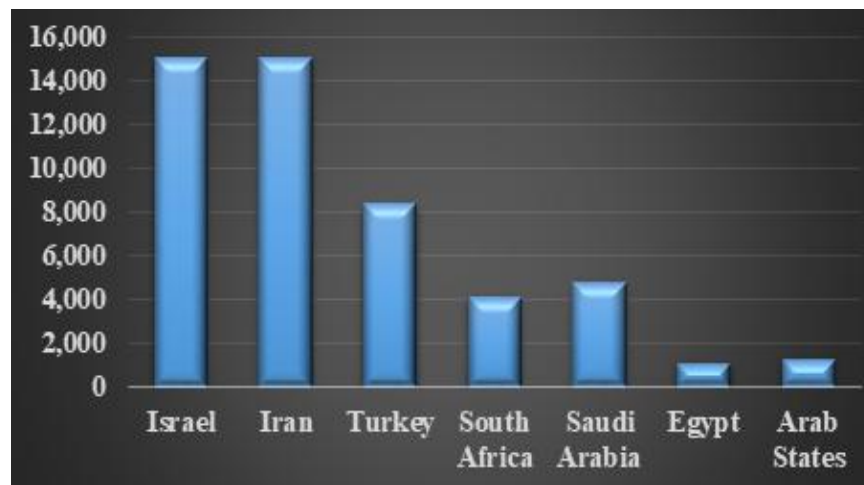


Fig. (12) Total granted patents in the period 2007-2016.

Table (2): Rankings of total (resident and abroad) IP filing activity by origin, 2015.

Country	Patents	Marks	Designs
Israel	15	58	35
Iran	17	81	12
Turkey	23	9	6
Saudi Arabia	34	90	64
South Africa	36	36	46
Egypt	48	50	36
UAE	61	51	69
Morocco	64	46	21
Syrian	75	52	67
Tunisia	76	118	77
Qatar	81	82	127
Jordan	82	80	88
Lebanon	85	92	103
Algeria	88	47	47

However, one should observe that the U.S. is a major home for Arab inventors. In the period 2009-2013, there were 8,786 patent applications representing 3.4% of the total, which had at least one Arab inventor, despite the fact that Arabs represent only 0.6% of the total population of the country. As patents usually have multiple inventors, and Arab inventors often patent jointly with non-Arabs, 2,962 patents, or 1.2%, can be contributed exclusively to Arab inventors. California serves as a home for more than one-third of PCT patent applications from Arab inventors with 1134 patents, equivalent to 16% of all Arab patents worldwide (Mahroum et al). Similarly, the European Union saw 1,424 patent applications from Arabs, and looking specifically at countries, France with 513 patent applications in the five-year period, Germany had 342 and the United Kingdom with 273. Canada had in fact 361 patent applications from Arabs in the five-year period. Arab women inventors are still a minority, and the share of female inventors varies across technical fields, and requires further investigations and analysis.

However, the relative success of Arab scientists in the west is counterbalanced by the phenomena of brain-drain which had affected the Arab world for decades and still in the rise. According to UNDP 2014 report on Arab Knowledge, the region is one of the most affected by the emigration of highly skilled academics and researchers and graduates of higher education institutions standing at 9%, which is twice the world average. The rate increases to reach 35% in Lebanon and 17% in Morocco. The performance of a number of Arab countries on several indicators within the “Global Competitiveness Index” is shown in Table (3) which depicts world ranking in the overall index and sub-indicators that constitute its pillars. Israel leads the region in the global competitiveness index but most of the Gulf States are not far behind and better positioned in their capacity to retain and attract talent.

However, the rest of Arab countries actually suffer from the phenomenon of brain drain and their ability to provide job opportunities to university graduates and keep national capabilities and competences. Apparently, competing countries in the region such as Iran and Turkey, and even South Africa, face similar challenges. However, it is evident that Israel has the edge due to its strong innovation capacity, technological readiness and the quality of its higher education system.

**Table (3): Country ranking according to the Global Competitiveness Index” and some of its constituent pillars.**

Country	Global Competitiveness Index	Capacity to Retain Talent	Capacity to Attract Talent	Higher Education	Innovation	Technological Readiness
Israel	16	19	37	21	3	7
UAE	17	2	2	36	25	24
Qatar	25	9	7	37	21	34
Saudi Arabia	30	27	24	43	40	44
Bahrain	44	31	22	39	45	31
Kuwait	52	86	89	95	103	68
Turkey	53	82	103	48	69	62
South Africa	61	78	66	86	39	54
Oman	62	36	29	71	76	59
Jordan	65	66	78	63	46	67
Iran	69	104	108	51	66	91
Morocco	71	90	69	101	94	82
Algeria	86	123	127	92	104	98
Tunisia	95	111	119	62	99	85
Egypt	100	103	116	100	109	94
Lebanon	105	105	105	74	58	64
Mauritania	133	113	126	137	136	132
Yemen	137	130	129	136	143	136

<https://knoema.com/WFGCI2015/the-global-competitiveness-report?indicator=1001080-7-08-country-capacity-to-retain-talent-1-7-best>

### Internationalization of Arab Research and Higher Education

Science is becoming an increasingly international enterprise addressing questions of global significance. According to the “UNESCO Science Report: Towards 2030”, there were 7.8 million full-time equivalent researchers in 2013, accounting for 0.1% of the global population. The Global R&D Funding Forecast also revealed that global R&D investments increased to a total of \$1.948 trillion in purchasing power parity (PPP) in 2016. In addition, there are 28,100 active scholarly peer-reviewed journals, publishing 2.5 million new scientific papers each year. Consequently, scientific collaboration patterns are the changing. The Arab world may benefit significantly from international opportunities and cooperation which can be harnessed to tackle regional problems effectively and professionally.

Moreover, there were approximately five million university students studying abroad in 2016, an increase of 67% since 2005, and this number may increase to 8 million students by 2025. The USA share is over 19% of this global movement which bears the seeds of future science, research and development, followed naturally by other OCED countries as shown in Fig. (13). Saudi Arabia is the only exception, attracting 3% of international students, possibly from the Muslim world. This distribution slightly changes for postgraduate students where the USA tops the list of countries of attraction with 26% of the total master and PhD students, followed by UK 15%, France and Germany 10% each, Australia 8%, and again other OCED countries, as detailed in Fig. (14).

Mobility may also enhance university-industry collaboration which, in an ever more interconnected world, is regarded as essential for all graduates, regardless of whether they stay at home or live abroad. In recent years, globalization has fostered the growth of a global higher education industry. The “Open Doors” report on international educational exchange for the year 2013, for example, states that the number of international students at colleges and universities in USA increased by 7% to a record high of 819,644 students in the 2012/13 academic year, an increase of 55,000 students on the previous year, while USA students studying abroad increased by 3% to an all-time high of more than 283,000.

Currently, international students make up slightly fewer than 4% of the total student enrollment at the graduate and undergraduate level combined, contributing approximately \$24 billion to the US economy. The number of students from Saudi Arabia in the USA alone has reached 111,000 in 2014, up from 10,000 in 2007, mainly through funding from the King Abdullah Foreign Scholarship Programme which allocated more than \$2.6 billion (SAR10 billion) for this purpose. In addition, the UNESCO Institute for Statistics states that the rise in internationally mobile students reflects growing university enrolment around the world. In 2012, at least 4 million students, half originating from Asia, went abroad to study, up from 2 million in 2000, representing 1.8% of all tertiary enrolments globally. The United States, United Kingdom, France, Australia and Germany were the top 5 host countries for international students in 2012. In total, over 308,000 Arab students studied abroad in 2012, representing over 3.6% of the total student body in Arab higher education.

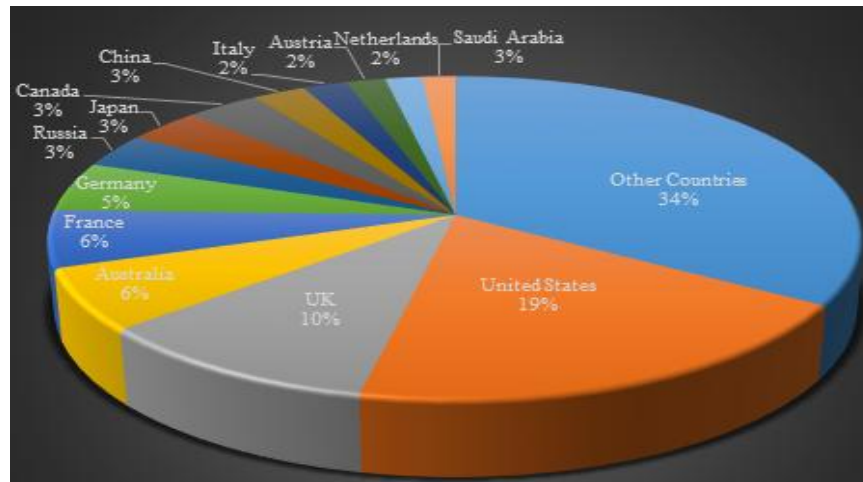


Fig. (13) Distribution of international students in higher education by country of destination (2013).

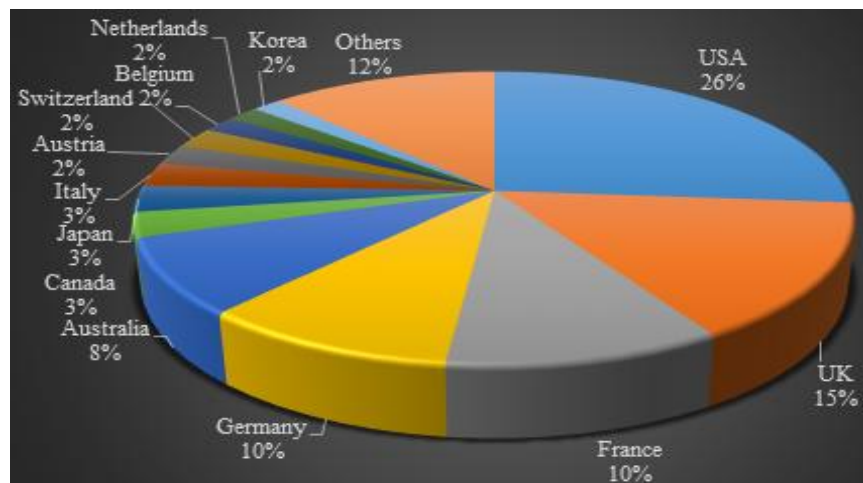


Fig. (14) Distribution of international postgraduate students by country of destination (2014).

In recent years, internationalisation has steadily moved from a useful add-on to a strategic core pillar for almost all universities aspiring to global significance. Many institutions have moved towards developing mature internationalisation agendas that incorporate recruitment, research collaborations, and capacity building. One important form of cooperation had taken the form of alliances, both bilateral and multilateral.

The universities within these alliances usually share common values, vision goals, commitment, academic diversity and international collaboration. The Association of Pacific Rim Universities (APRU), International Worldwide Universities Network (WUN), Alliance of Research Universities (IARU), the League of European Research Universities (LERU), and Europaeum, are just few examples of multilateral, global university alliances designed to share common learning and confront common concerns together. The alliances actually offer opportunities for scholars, leaders, academics and graduates through international conferences, summer schools and colloquia, and enables leading figures from the worlds of business, politics and culture to take part in transnational and interdisciplinary dialogue with the world of scholarship.

Arab universities can benefit from building on longstanding connections between academics in prestigious international universities to further strengthen ties and relationship, research collaboration, student exchange, and a joint postdoctoral programme. Arab universities are also expanding their international reach as an overarching priority of their strategic plans. In fact, many universities are beginning to participate in valuable alliances with other universities across the globe through which these groups undertake joint educational and research initiatives, create international opportunities for students, allow space to work with peer institutions on topics of mutual interest such as research funding, and facilitate good practice sharing between institutional leaders. Accordingly, opportunities of international collaboration are constantly being realized that may be harnessed to tackle global problems effectively. Today, Arab states find it very important to contribute to the institutionalization of the process of internationalization in Arab universities. In order to reach this objective, the strategies and the models for an integrated internationalization management should take into account the regional needs and learn from international experiences, and to contribute to the enhancement of efficient structures that will improve governance procedures within university hierarchy.

### **Role of Association of Arab Universities**

In recent years, the Association of Arab Universities (AArU) has played an important role in opening up opportunities to its 324-member universities to international collaboration with leading universities and institutions across the globe. In fact, AArU has laid the foundation for the internationalisation of Arab higher education and acted as a platform of collaboration through numerous activities and initiatives.

In a step to support financing scientific research at Arab universities, AArU launched a Scientific Research Fund in March 2012. The Fund, supervised by the secretary general as chairman of its board, aims to prioritize scientific research in the Arab world, supervise submission and evaluation of research projects and follow-up implementation. The Fund has identified some of the supporting bodies in the Arab world and currently seeks to attract Arab human expertise throughout the globe to share their colleagues in the Arab countries, and to open channels of communication with centers on global development in light of the opportunities provided by globalization. Major research projects in the fields of biotechnology and applications of agricultural, veterinary and medical, renewable energy, youth and contemporary challenges, heritage, and the study of manifestations of extremism, violence and others, were proposed for funding in 2014. The Council is currently performing functions and undertaking powers that include adoption of the policies, prioritize scientific research support areas, approving principles and criteria for evaluation of research projects, forming specialized technical committees to evaluate research projects and make appropriate recommendations, discussing and approving the annual report on the activities of the Fund, approving the future work plan and budget, laying the foundations for cooperation and coordination with other bodies concerned with scientific research at regional and international levels. Meanwhile, AArU has initiated a series of conferences, symposiums and forums in cooperation with counterpart associations in China, Europe, Malaysia, Turkey, Germany and others. One of the first conferences was the “The Higher Education Summit of Arab and Malaysian Universities”, held at the University of Islamic Sciences in Kuala Lumpur in the period 4-5 October 2012, the second hosted again by the same university in the period 17-20 October 2016 while the third held in the period 26-27 June 2018 at the Islamic World University in Malaysia.

A similar initiative was launched with Chinese universities when a symposium of the presidents of Chinese and Arab universities was organized in cooperation with the Ministry of Education of the Central Government of China, hosted in the period 11-13 September 2015, while the second hosted by Zarqa Private University, Jordan, in the period 26-28 September 2016. In addition, AArU has organized several conferences with Turkish universities, the first and second were hosted by Istanbul Medeniyet University under the theme: "Arab-Turkish Higher Education Conference", in the periods 26-28 April 2014 and 26-28 April 2016 respectively, and the third hosted by the University of Istanbul Aydin in the period 13-15 February 2018.

Furthermore, AArU cooperated with Chemnitz University of Technology, Germany, to organize the Arab German Conference of Technical and Engineering Universities in the period 26-28 October 2014. However, one of the major initiatives that AArU has taken was the organization of a series of Arab-European Conference on Higher Education (AECHE), the first held at the University of Barcelona in May 2013, the second held at Princess Sumaya University for Technology in Jordan in June 2014, the third again at the University of Barcelona in May 2016, and the fourth at Mohammed V University, Rabat, Morocco, in April 2017. All these conferences were organized in cooperation with the European Universities Association and University of Barcelona and targeted university leadership and presidents. The fifth conference is planned to be hosted the of Aix-Marseille University in France or at the University of Sicily in Italy, and work is under way to prepare all the arrangements related to the conference. The initiative has in fact been a success story since it brought for the first time university leadership from both sides of the Mediterranean under the theme "Scientific Research for Sustainable Development of Societies: The Role of Universities". With the presence of more than 200 participants representing 140 Arab and European universities. The activities performed by AArU within Arab countries and international partners in the period 2011-2017 are summarized in Fig (15) and Fig. (16), respectively. These include the number of meetings, seminars, workshops, and conferences organized and held.

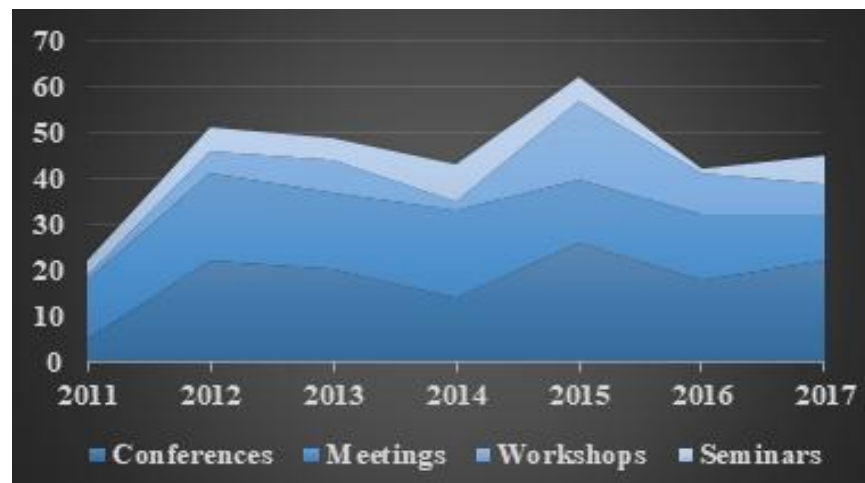


Fig. (15) Activities of AArU within Arab countries in the period 2011-2017.

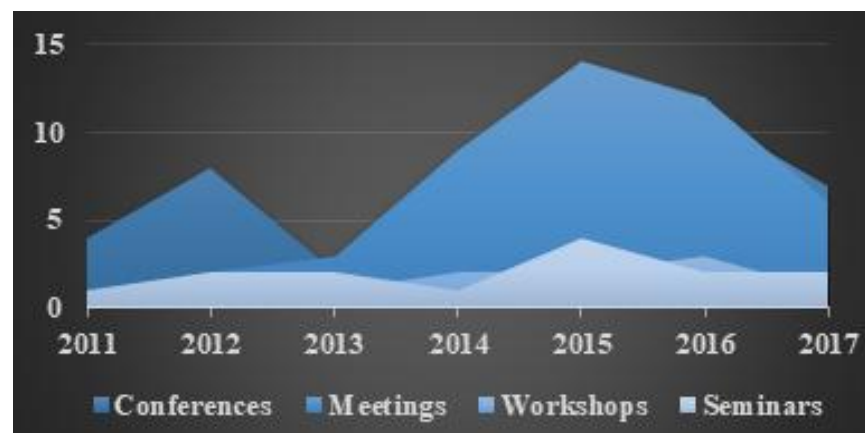


Fig. (16) International activities of AArU in the period 2011-2017.

AArU has also participated actively in European projects within programmes such as Tempus, Erasmus+ and Erasmus Mundus for exchange and mobility. AArU has actually played an important role in projects such as “Leadership in Higher Education Management” which aimed to support higher education institutions to establish a network for university leaders to encourage the convergence of universities and facilitate the exchange of students, researchers, academics and administrative staff among partners through training centers.

In addition, AArU was a partner in a project entitled: “Building Capacity for University Management” which aimed to modernize administrative methods, prepare models for professional master degree on university administration and to establish a training center for governance programs to improve and support leadership, governance and management of higher education in the Mediterranean countries. Other projects’ participations included “Modernization of Institutional Management in International” which aimed to build the capacity of human resources in universities involved in the internationalization of higher education, encouraging the establishment of a university structure for the internationalization of higher education, establishing an Arab network for the internationalization of higher education and ensure quality management of internationalization of higher education, “Tuning Middle East and North Africa” which was concerned with the application of the coordination method in the design of the academic program, “Enhanced Quality of Technology-Enhanced Learning at Jordanian Universities” to improve and develop accreditation standards and quality assurance methods in distance learning programs, “Knowledge of Recognition Procedures”, aimed to strengthen competition and skills to assess the quality of university diplomas in the Middle East and vice versa, and “Enhancing Quality Management in Jordanian Universities”, aimed to establish a model for evaluating the quality of higher education system and building the capacity of the quality control units and offices in universities to reach international standards in quality control procedures.

Furthermore, AArU is currently participating in Erasmus+ projects such as “Towards a National Qualification Framework” which aims to reform the higher education system in Jordan by developing a proposal for the general framework of qualifications and identifying the required capacities of all levels of higher education programs, and “Modernization of Institutional Management of Innovation and Research in South Neighboring Countries”, which aimed to develop a Euro-Mediterranean strategic partnership by supporting capacity-building activities in research and innovation.

One main aspect of Arab higher education that warrants specific note and urgent actions is student mobility. Arab youth, estimated at 100 million under the age of 25 and constituting an estimated 60% of population, is seeking to enter a system of higher education that continues to fall far short from fulfilling the needs of society. This young generation of Arab students has legitimate expectations but face economic and political constraints which need to be addressed and resolved instantly. Urgent action in formulating a programme for education reform at the Pan-Arab level is called for in order to foster cooperation of students and staff exchange, encourage joint postgraduate programmes and address research problems common to the region. Initial steps have been undertaken by AArU to enter Erasmus Mundus in projects such as Fatima Al-Fihri, “Program for Excellence Academic Cooperation Exchange PEACE”, and Developing Higher Education and Scientific Research between the Europe and the Middle East” (HERMES). These projects aimed to transfer experience and knowledge, equip students with appropriate skills to qualify for the labor market, as well as international experience in the context of globalization; and contribute to the harmonization of curricula in accordance with the Bologna process. The establishment of a new Pan-Arab programme for exchange of students and staff amongst Arab universities and institutions of higher education is envisaged in a way that mimics these European Erasmus Mundus and International Credit Mobility programmes which has facilitated short-term mobility for over three million students and staff in the last decade. The proposed scheme aims at supporting Inner-Arab university cooperation, promoting joint postgraduate study and research programmes, fostering mobility of students and consolidating exchange of academic staff, accelerating the process of internationalization and institutional capacity building, sustaining employability and enhancing the knowledge-based economy in the Arab world. AArU has been an appropriate arm in the quest to launch such a programme, but further efforts need to be undertaken to bring it onto light.

## **Discussion**

Major reform in the Arab higher education, which is as diverse as Arab nations, has become a matter of national existence. Arab universities must seek effective opportunities to reach international standards in areas such as autonomy and governance and to improve institutional performance and quality of graduates by adopting modern methods of creating knowledge and quality of research aimed to tackle socio-economic.

Cooperation and coordination among universities is a priority area for improvement in order to facilitate exchange of information, experiences, publications and co-research, connection between scientific research and national sustainable development plans, and emphasizing quality and innovation. In addition, scarcity of specialized research centers, dearth of research groups, destitution of teamwork, feeble links between research institutes and industrial sectors that all lead to unemployment of research results in economic projects must be addressed efficiently. In fact, research quality and output in the Arab world may be enhanced dramatically when proper coordination, cooperation and synergy is established between single states, particularly when one considers that total research output of all Arab countries far exceeds all emerging economies of the region, as demonstrated by the total citations received compared to other leading countries.

Evidence are accumulating that Arab scientific community today faces a host of hurdles in scientific research manifested by lack of clear focus in 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. Arab governments must increase expenditures on scientific research to at least 2% of the national income GDP, and the number of researchers per million inhabitants to 2000 by year 2030. Failure to do so will result in catastrophic results in the whole region and the world beyond.

Loss of human capital, intellectual elements, brain drain and emigration of highly skilled academics and researchers in Arab countries must be addressed properly by governments. The absence of vibrant education and research environments coupled with low wages has supported brain drain and presents severe crisis in the development of the region. Governments must find ways to improve indicators on their capacity to retain talent and their ability to provide job opportunities to university graduates and keep national competences and talents. Governments must prepare adequate conditions and offer incentives to encourage intellectuals, scientists, researchers and creative people to return and contribute to the renaissance of their countries. Arab states must also benefit from the experiences of several developing countries, such as East Asia, that have aspired to build progress focused on knowledge and interest in research. These countries have succeeded in benefiting from the emigration of their scientists, researchers and highly skilled citizens, and have turned loss into profit. For instance, India built organized and strong ties with its emigrant citizens abroad, and extended these ties locally into networks and partnership programmes. It also encouraged its scientist citizens abroad to return to invest in the national economy and to bring along their savings and high-level scientific expertise, which benefited the nation's institutions economically and politically. The same applies to China, which encouraged its citizens to return by providing them and their children with education and housing, and opened research centres and highly skilled jobs.

Arab universities should develop structured and strategic processes of internationalization and harmonization of governance and practices to ensure wider improvements in research and exchange partnerships. In fact, Arab universities have long been on the path of internationalisation as most of its scholars and professors were educated in the western hemisphere. Several universities have established international offices, or appointed advisors to presidents or vice-presidents for international affairs and are involved in international activities in some form or another such as mobility exchanges for staff and students, joint degrees and programmes with universities from all over the globe, joint research projects and scientific conferences. EU programmes, in particular, have attracted many institutions and academics alike to become actively and deeply involved in the internationalisation process of higher education. Further positive and proactive steps and accompanying measures need to be undertaken in order to consolidate the internationalization process successfully. At the heart of all this lies the necessity to formulate a new internationalization strategy and design an efficient management model of governance at the institutional level, including participation in educational and research projects, exchange of students and staff, and launching joint or double postgraduate programmes. AArU may play a pivotal role in such a process.

It may be noted however that there has always been an inner mobility of students amongst Arab countries. One in every five Arab students studying abroad receives education in an Arab university in a country other than her/his. Such mobility is however based on the individual level and there is hardly an organized or structured programme to support it. A new scheme or programme for inner Arab mobility of students and staff amongst Arab universities and institutions of higher education must be considered and spearheaded by AArU.



The scheme may support cooperation between Arab universities with a view to promoting study programmes, foster mobility of students by promoting transparency, mutual recognition of qualifications and portability of credits, consolidate mobility of academic staff to improve mutual understanding and expertise, accelerate the process of the internationalization and academic capacity building, enhancing the knowledge-based economy and society and maintaining sustainable employability and economic growth and its greater social cohesion in the Arab world.

## Conclusions

Arab higher education requires major reform in order to keep abreast with global changes and advancements and to serve socio-economic developmental goals. The state of scientific research in particular remains much lower than national aspirations and as such needs alignment with the actual needs of society and state. Governments must prepare national strategic plans for science, technology and research in order to tune all sectors within the state to work together towards common objectives and key performance indicators, including universities and higher education institutions. Usually, a management structure and hierarchy, connected to the state head, is designed to support and supervise the implementation of the top-down strategy. In this way, universities are integrated onto the economic and industrial sectors in order to serve the goals and objectives of people, society and state.

The establishment of a new Pan-Arab scientific programme for research and development, capacity building and exchange of students and staff amongst universities and institutions of higher education has become a necessary step towards enhancing and consolidating cooperation between Arab countries. The proposed programme aspires to facilitate cooperation and accelerate the process of internationalization and institutional capacity building in Arab universities as well as short-term mobility for students and staff. The Association of Arab Universities may be the most appropriate umbrella to embrace, incubate and manage such programme.

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