



# Knowledge production in Arab countries

*The production of knowledge, the focus of this chapter, takes place at an advanced stage of knowledge acquisition in any society and is the widest, if not the only, gateway to the world knowledge society. The quantity and quality of knowledge produced by a society is evidence of its ability to add to the world reserve of human knowledge and to renew the wellsprings of its own creativity.*

*What is the status of Arab scientific, technological, literary and artistic production today? What are the factors that have shaped the current situation? This line of enquiry holds the essential keys to the development of knowledge producing societies in the region.*

This chapter seeks to evaluate the amount of knowledge produced in the Arab world. It also analyses how far the conditions required by a knowledge society (qualified research workers, innovative institutions, supportive policies) are present in the region. In doing so, it investigates the quality of scientific research and technological development, and the products of creativity in the humanities, social sciences and the arts. The two central questions that all Arab countries must answer are: what in the past and present points to a brighter future for the advancement of knowledge production in Arab countries, and what are the means that will enable countries to own science, rather than merely importing some of its applications and results?

The history of scientific development shows that science cannot be developed without institutions dedicated to this purpose and without promoting the vocation of scientists and scientific applications. Moreover, scientific culture can only pass from one society to another, whether by means of translation or the transfer of scientists and know-how, if the requisite infrastructure and institutions for embracing science and owning it are in place.

Europe would not have been able to utilise scientific knowledge at the beginning of the industrial revolution had not scientific education, on the one hand, and scientific culture, on the other, permeated society through many channels.

## BOX 3.1

### Muhamad Ali's Experience in Scientific Modernisation

The first attempt at scientific modernisation in the Arab world was made by Muhamad Ali in the first half of the 19<sup>th</sup> century. This attempt, as well as others that followed it, encountered several stumbling blocks.

Two illusions thwarted the attempt and they continue to trap many developing countries. The first was the belief

that scientific production could be transferred without planning and building a strong infrastructure for research, and without laying the foundation of a scientific and technological culture in society at large. The second, an outcome of the first, was the erroneous belief that basic research is dispensable for financial reasons.

Source: Roshdi Rashed, in Arabic, background paper for AHDR2.

## BOX 3.2

### Ali Mustafa Mosharrifah\* - On the importance of the history of science for a knowledge renaissance

Civilised nations must have a culture associated with the history of their scientific thought... Our scientific life in Egypt needs to be attached to our past in order to acquire the necessary strength, vitality and controls. We in Egypt transfer the knowledge of others and leave it floating without any relationship to our past or any contact with our land. It is a commodity that is foreign in its features, foreign in its words and foreign in its concepts. If we mention theories, we associate them with faceless names that we hardly know. If we talk about concepts, we use intimidating words that drive away thoughts and unsettle the mind.

We have first to publish the scientific books authored by Arabs and translated by Europeans, like the books of al-Khwarizmi and Abu Kamel in algebra and arithmetic, those of Ibn al-Haytham in physics, of al-Buzjani, al-Bayroni, al-Battani and other leaders of scientific thought and talented researchers... We must pay attention to honouring our ancient scientists and researchers. This will prompt us to imitate them and follow in their footsteps.

\*The first professor of mathematical physics and the first Arab Dean of the Faculty of Science, Cairo University.

Source: Roshdi Rashed, background paper for AHDR 2.

## SCIENTIFIC PRODUCTION: NATURAL SCIENCES AND TECHNOLOGICAL DEVELOPMENT

### SCIENTIFIC RESEARCH AND TECHNOLOGICAL DEVELOPMENT – OUTPUTS

*Arabic research activity continues to be far from innovative.*

Up-to-date and accurate information about the outcomes of research and development (R&D) in the Arab region is hard to come by in the absence of comprehensive statistics on specialised sectors or research topics. Yet certain outputs can be measured through scientific publications, patents and inventions.

#### Scientific research

Based on the number of scientific publications per million people (26 research papers in 1995), Arab countries fall within the advanced group of developing countries, which include Brazil (42), China (11) and India (19), although they are still far removed from the production levels of developed countries, such as France (840), the Netherlands (1,252) and Switzerland (1,878).

The scientific publication movement in the Arab world experienced a substantial increase in the last three decades of the 20th century. The number of papers published by Arab scholars in specialised global periodicals increased from 465 papers in 1967 to nearly 7,000 in 1995, i.e., by 10% annually. This increase was, however, modest in comparison with some developing countries, such as Brazil, China and East Asian Tigers such as Korea. Calculating the rate of increase in published scientific papers per one million people makes an instructive comparison with these countries. Based on that indicator, the number of scientific papers per one million people in the People's Republic of China in 1995 was 11 times what it was in 1981. In South Korea, it was 24 times greater. In Arab countries, however, it was only 2.4 times greater, increasing from 11 papers per one million people in 1981 to 26 papers in 1995.

At the institutional level, only 26 Arab scientific institutions published more than 50 research papers each in 1995, while only five such institutions published more than 200 pa-

pers.

Most of these publications were in applied fields, such as medicine, health and agriculture. Medicine, health and life sciences accounted for 32% of the total R&D products published by Arab countries in 1995 and chemistry accounted for 19% of total research products for that year. When one adds to these fields the papers published in agriculture, engineering and associated fields the total products of applied research represented 90% of all publications. Publications in basic sciences, astronomy, chemistry, physics and mathematics did not exceed 10% of total research (Amr Armanazi, background paper for this report).

These rates have important implications. Despite the increase in the number of published Arabic research papers in specialised global periodicals, Arabic research activity continues to be far from innovative. Most of it is applied research and only a small portion is related to basic research. Research in advanced fields, such as information technology and molecular biology, is almost non-existent.

Among the indicators for measuring the quality of research in general is the number of references made to it. The higher the level of a research paper and the more it adds to human knowledge the more references it attracts. The first Arab Human Development Report indicated that only one paper each in Egypt, Saudi Arabia, Kuwait and Algeria in 1987 was quoted more than 40 times, while in the United States 10,481 papers were quoted more than 40 times and in Switzerland 523 papers (First Arab Human Development Report, 2002, p. 67).

#### Patents

Indicators of the number of patents in Arab countries confirm the weakness of R&D activity, which lags far behind that of developed countries and other countries of the developing world. Table 3-1 indicates the number of patents registered in the United States during the period 1980-2000 for some Arab countries, compared to patents registered from selected non-Arab countries. It should be noted that a large number of patents registered in Arab countries are by foreigners. (Amr Armanazi, background paper for the Report).

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Scientific publications and patents are useful but insufficient indicators of scientific research and technological development activity. They do not indicate the full spectrum of innovation activity, which is more related to development support products. National innovation, in general, includes the development of new products, production processes and services and the development of modern technologies for sectors where technology plays an important role in performance and increases efficiency. Indicators related to innovation processes, such as the design and engineering of products, production processes and software, are not readily available. Innovative capabilities can, however, be gauged by demonstrating the widespread presence of innovations in national and foreign markets that can be counted and evaluated. On that criterion, there are virtually no Arab innovations on the market, a fact that confirms that Arab scientific research has not yet reached the innovation stage.

#### TECHNOLOGICAL RESEARCH AND DEVELOPMENT – INPUTS

##### Producing knowledge workers

Higher education fuels the knowledge society and produces those who will work in it. National scientific research and development activities, as well as industries, need highly qualified graduates and researchers with enquiring and trained minds and flexible skills.

Statistics indicate a sustained increase in the number of students in higher education institutions in Arab countries over successive years, with a noticeable increase in the number of female students. These statistics indicate, however, that only a small number of students and graduates have opted to specialise in basic sciences, engineering, medicine and other scientific subjects. The low rate of graduates, both researchers and technicians, in science and technology disciplines undercuts efforts to build balanced human capacity in the field of science and technology. There is also a need for larger numbers of graduates of intermediate technical institutes to enlarge the pool of workers with technical know-how and skills of a practical nature.

TABLE 3.1  
Number of patents registered in the United States from Arab and non-Arab countries during the period 1980-1999/2000

Arab Countries		Other Countries	
Country	No. of Patents	Country	No. of Patents
Bahrain	6	Korea	16,328
Egypt	77	Israel	7,652
Jordan	15	Chile	147
Kuwait	52		
Oman	5		
Saudi Arabia	171		
Syria	10		
UAE	32		
Yemen	2		

Source: Abdulkader Djeflat (March 1999) and Omar Bizri (April 2000).

Training in Arab countries in general is driven by supply rather than demand and the focus is on quantity, not quality. With a few exceptions, higher education systems respond weakly to labour market needs related to science and technology. This situation is not expected to change noticeably, barring a strong push on the demand side from industry, business and national institutions and in the context of coherent and comprehensive science and technology policies, which clearly emphasise these urgent orientations. Upgrading the level and quality of training also depends on an increase in funding. Higher education institutions generally underscore that they lack resources, a complaint borne out by statistics related to per capita expenditure, with some variations between Arab countries. The under-funding of higher education impacts negatively on science and technology in particular, because these fields require the provision and renovation of costly special facilities, equipment and materials. Meagre facilities inevitably lead to a marked decline in the level of graduates in science and technology fields, which in turn limits the ability of research centres and productive firms which employ these graduates to achieve advanced levels of scientific and technological performance and accomplishment.

In general, the ratio of students enrolled in scientific disciplines in higher education in Arab countries is small, compared to advanced countries in the field of knowledge, such as Korea, although Jordan, followed by Algeria, are distinguished among Arab countries in this field. See Figure 3.1.

*Training in Arab countries is generally driven by supply rather than demand and the focus is on quantity, not quality.*

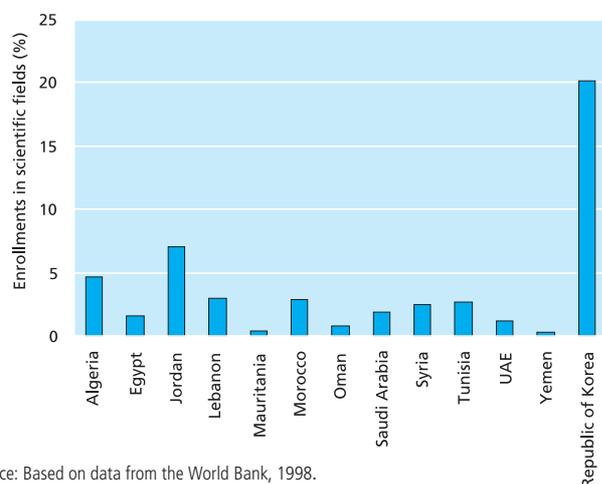
*The under-funding of higher education impacts negatively on science and technology in particular.*

## Workers in scientific research and development

The data available on the number of R&D and technical workers in the region and by individual countries is scarce and incomplete.

Figure 3.1

### Ratio of students enrolled in scientific disciplines in higher education in selected Arab countries and Korea, 1990-1995

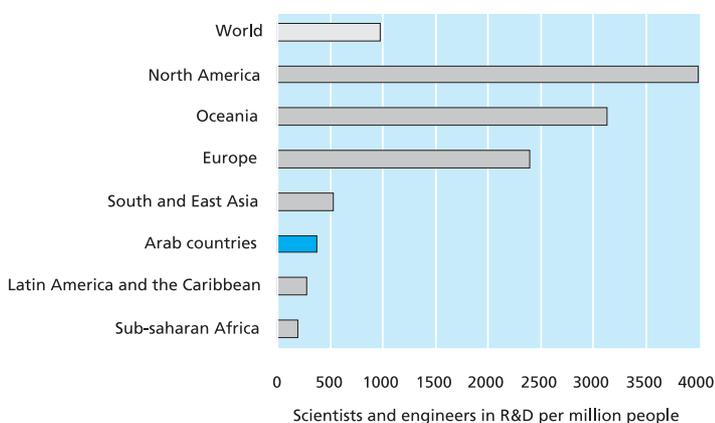


Source: Based on data from the World Bank, 1998.

Figure 3.2

### Number of scientists and engineers working in research and development (per one million people)\*

Regions of the world, 1990-2000



Source: UNDP, 2002.

#### BOX 3.3

#### Kuwait: Profile of University Graduates

In Kuwait, 44 per cent of university graduates receive their degrees in the humanities, 18 per cent in public administration and 12 per cent in Islamic law. Graduates in natural sciences, engineering, medicine, pharmacology, health and

nursing represent just 26% of the total number of graduates.

Furthermore, 67 per cent of all graduates in higher education are women. This is partly due to the fact that many male students study abroad.

Source: Country Report prepared for AHDR 2.

There are, however, a number of telling indicators of the present situation:

- The total number of full-time researchers in Arab countries, including those pursuing the equivalent of full-time research among teaching staff, is around 35,000. Half of this number works in Egypt.
- There is an average of 3.3 researchers holding masters and doctoral degrees for every 10,000 persons in the Arab work force (1996 statistics). This is a very low percentage, representing 3% to 10% of the rates of the same indicator in developed countries.
- There are only 50 technicians for every one million citizens, another very low figure when compared to the 1000 technicians per million citizens in developed countries.
- Women and their talents are significantly under-represented in scientific research institutions in Arab countries. In Egypt the percentage is relatively higher than in other Arab countries. Nevertheless, across the region, considerable potential exists for investing much more in women scientists, engineers, and technicians. (Amr Armanazi, in *Arabic*, background paper).

Figure 3.2 indicates the low ratio of scientists and engineers working on research and development in Arab countries compared to other regions of the world.

The number of countries on which data are available was 91 countries (out of 179), of which only 5 were Arab countries.

## Expenditure

Stimulating research and development requires the political will to indigenise science and establish the necessary infrastructure. This calls for greater R&D outlays than the fractional sums Arab countries currently invest, which do not exceed 0.2% of GNP, although this ratio varies from one country to another. For comparison purposes, the ratios spent by developed countries vary from 2.5% to 5%. Furthermore, 89% of expenditure on R&D in Arab countries comes from governmental sources, while productive and service sectors spend only 3%, as against more than 50% in developed countries. (See Table 3.2)

The low level of investment in research by

\* The average number in the region is calculated as a weighted average (population number in 2000) for data on the number of scientists and engineers working in research and development by country.

the productive sector, both public and private, is a clear indication of the poor environment for, and weak level of innovative activity in Arab countries, considering that government spending largely covers only salaries.

As these figures illustrate, societal awareness of the far-reaching importance of supporting scientists and science is extremely weak. The enormous gains in knowledge that accrue from a vital local R&D establishment should not be held hostage to social indifference. Leadership is required to motivate Arab societies to take responsibility for research and innovation. In developed countries, enterprises, wealthy individuals, foundations and non-profit organisations all finance such research.

In the long run, boosting public and private investment in R&D activity will raise the added value of products, processes and services generated from such research, provided that new research is translated through innovation activities into commercially marketable results. Successful commercialisation would make it possible to invest a portion of the resulting profits in financing future innovation activities. This would generate a sustainable financing dynamic, which would continuously replenish R&D. It would transform R&D from a drain on state and private sector budgets to a profitable investment, supporting the gross national product and driving the wheel of economic and social development. Encouraging the private sector to finance R&D does not, however, imply that the state should relinquish its important responsibilities in this field. Scientific research, especially basic research, cannot be a captive of the market. States play a large role in ensuring policy conditions conducive to institutional research, and in incentivising the private sector, through tax and other instruments, to invest in research and innovation.

### Institutions

There are essentially three categories of Arab institutions that focus on research and knowledge development. The first are higher education institutes and their affiliated research centres; the second are free-standing specialised centres of scientific research; and the third are R&D units with links to industry.

TABLE 3.2  
Rate of expenditure as a percentage of GNP and sources of R&D funding: Arab states compared with selected countries, 1990-1995

Region or group of countries	Average expenditure (% of GNP)	Percentage share of funding sources		
		Government	Industry	Other
United States, Japan and Sweden	3.1	20-30	55-70	4-10
Germany, France, United Kingdom, Italy, Australia and Canada	2.4	38	52	10
Greece, Portugal and Spain	0.7	54	35	11
Turkey and Mexico	0.4	65-73	14-31	5
Arab states	0.2	89	3	8

Source: Subhi Al-Qasim, 1999.

According to some estimates, there are a total of 588 such entities in the region.

There are 184 Arab universities, all with activities associated with higher education and scientific research and promotion. Scientific research in higher educational institutions and some associated centres is often academic in character, although there are visible moves in some Arab countries (Algeria, Iraq, Qatar, Libya, Egypt and Morocco) to link a portion of research projects to societal needs.

The specialised scientific research centres associated with some universities vary in size, means and productivity, but most of them focus on agricultural, health and engineering research. (The total number of centres specialising in industry, energy and petrochemicals does not exceed one-third of the number of centres specialising in agriculture). According to available estimates, there are some 126 of these affiliated centres in all Arab countries. (Taha Tayeh Al-Nu'aيمي, Scientific Institutions in the Arab Homeland and their Impact on Scientific Research Activity, 2000.)

In the second category, there are approximately 278 scientific research centres and organisations outside universities, including central research organs (national research centres and institutes) and those connected with ministries or industrial and agricultural firms. Table 3.3 indicates the distribution of these centres in the various Arab countries.

The great majority of these centres specialise in agriculture, water resources, health, nutrition and the environment. Centres specialising in biotechnology or electronics do not

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TABLE 3.3  
**Number of scientific research centres (outside of universities) in Arab countries**

Country	No. of centres	Country	No. of centres
Algeria	30	Oman	2
Bahrain	1	Palestine	13
Djibouti	1	Qatar	3
Egypt	73	Saudi Arabia	7
Iraq	22	Somalia	3
Jordan	9	Sudan	14
Kuwait	5	Syria	15
Lebanon	9	Tunisia	24
Libya	18	UAE	3
Mauritania	3	Yemen	9
Morocco	16		
<b>Total</b>		<b>280</b>	

Source: Al-Nu'aïmi, 2000.

*Research projects often lack clear objectives, a firm results orientation and a sense of urgency.*

exceed 3 percent of the total.

The third category of R&D institutions is the research and development units associated with productive enterprises or established as independent units. These units are small in number and their performance is below expected levels. There are no specific data about their total number, but it is estimated that there are some 16 units belonging to the private sector and concerned with industry. (Amr Armanazi, background paper for this report.)

The amount of R&D activity in the organisations and centres outside universities seems, in general, to be the same level as that carried out in the universities and the centres associated with them. University-based research itself is often either purely academic or narrowly applied in orientation, and is mainly driven by supply. In both arenas, research projects often lack clear objectives, a firm results orientation and a sense of urgency linked to producing high-impact developmental outcomes within a time-bound plan.

TABLE 3.4  
**Number of scientific and technological research centres (outside universities) in Arab countries, by field of specialisation and number of countries of location**

Research field	No. of centres	Percentage	No. of Arab countries of location
Agriculture and water resources	76	27	15
Industrial	34	12	14
Construction and development	8	3	7
Health, nutrition and environment	43	16	11
Space and remote sensing	17	6	10
Energy	22	8	12
Basic and pure sciences	11	4	6
Informatics, computer and communications	5	2	4
Biotechnologies	4	1	4
Electronics	4	1	3
Other	54	20	15

Source: calculated from data by Al-Nu'aïmi et al., 1988.

Possibly the most telling sign of weakness in Arab scientific R&D agencies is their inability to transform research results into investment projects. This vital orientation is usually either missing in research plans in the first place, or is simply beyond the knowledge, expertise, and facilities these institutions can muster.

## PRODUCTION IN THE HUMANITIES AND SOCIAL SCIENCES

The human sciences have historical traditions dating back to the time before the independence of the Arab countries, as is the case with studies of history and civilization, for instance. Social sciences as full-fledged disciplines, however, did not emerge and take hold in these countries until after independence when universities and research centres were established to teach and research these sciences. In other words, social sciences did not exist in the Arab world before the 1960s, with a few exceptions, mainly Egypt. In some countries, such as the Arabian Gulf countries, they did not emerge until a decade later.

The status of human and social sciences differs from one Arab country to the next in the level of their development, scholarship and social and political returns. There is not enough accurate data to draw an Arab map of their distribution. There are, however, general trends, which can be monitored on the basis of partial indicators. While Iraqis and Syrians, for instance, made excellent contributions to the study of history and civilisation, Egyptians made advanced contributions in the field of economic and political sciences, compared to other Arabs. Research traditions in sociology and anthropology seem stronger in the Arab *Maghreb*, in terms of both theory and methodology (Al-Taher Labib, background paper for this report).

The emergence of specialised research and training in these fields is tied to the rise of the modern nation-state, the national projects it proposed and the difficulties it faced in its early stages. From the outset, social sciences and human sciences dealing with "national history" were subject to political and bureaucratic steering. Directives to "find practical so-

lutions" defined their mission. This pragmatic trend incurred for certain disciplines, particularly sociology, an unjust reputation for being purely empirical, with no theoretical structure. That prejudice continues today. It also led to the emergence of certain "specialisations" with direct practical goals, such as "social service", a trend that spread throughout universities in countries of the Arab East, but which did not affect most of the *Maghreb* countries.

Many Arab scholars in the human and social sciences draw attention to a paradox in their situation. They note that, for Arab academics, students and researchers in particular, higher barriers have, in the course of events, actually accompanied the globalisation of knowledge, despite its promise of freer flows of knowledge, ideas and people. Undeniably, strained relations between some Western countries and Arab countries at different times have had an impact on the development of the human and physical sciences. This obstacle partly accounts for a regression in knowledge of foreign languages among university students and graduates who have remained in their own countries. A new kind of monolingual professor and researcher has started to gradually replace the kind of bilingual academic who in the past dominated most Arab universities and research centres. It has also affected Arab participation at international scientific meetings and, consequently, the Arab presence in international scientific groups and networks. (Al-Taher Labib, background paper for this report.)

A form of Arab self-containment hobbles co-operation with international partners in the humanities and social sciences. The emphasis on the "specificity" of Arab societies, a common preoccupation in Arab countries, has played a negative role in this respect, leading to a neglect of anything that is not "related to our reality" and a narrow focus in research on local or purely Arab subjects. This tendency has sometimes deprived Arab scholars of a comparative perspective and the capacity to link the particularities of their context to general structures and trends in the wider world. There is no accumulated tradition of Arab scholarship on the "Other". Institutions concerned with the study of other societies are almost non-existent. This is a striking

incongruity, given the external challenges faced by Arab countries.

Meanwhile, this form of insularity also affects Arab students pursuing research abroad, the majority of whom concentrate on research topics about their own countries or region. Few Arab PhD theses earned outside the region deal with the society in which the researcher temporarily resides. On the other hand, students and researchers who come to the Arab world, often do so to become more closely acquainted with the Arab world and to study it.

As a result, there is no accumulation of an Arab stock of scientific knowledge about "the Other". While Arab scholarship is becoming more inward looking, this tendency is not related to the will of scholars as individuals, but rather to a whole tradition and set of political choices.

Difficulties in the cognitive relationship with the "Other", and those arising from communication in Arabic, have thus limited how far Arab research is integrated into international networks. This, in turn, places restrictions on the universal dimension of research in Arabic. There are only a handful of Arab scholars and researchers who regularly write in foreign languages, whether English or French, and who commonly address issues of global interest.

It must, however, be said that Arab researchers, for all their concentration on Arab issues, have yet to establish a single dynamic Arab network or scientific group. A few scientific societies and professional associations have sprung up in disciplines such as economics, sociology, philosophy and history. But on the whole, Arab production in the social and human sciences remains an essentially individual effort and there are no circles or institutions that consistently work on bringing Arab researchers together and supporting them in an organised manner.

Thus, Arab researchers in the humanities and social sciences frequently work in a vacuum. They are integrated with neither global nor Pan-Arab groups. This isolation has led in several cases to observable frustration that has begun to turn into a general mood, reflected in a withdrawal into individual pursuits and a kind of indifference, not only to public affairs

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*A work of imagination is both mirror and lamp.*

but also to questions of knowledge *per se*.

Freedom of intellectual expression may be a more central issue in human and social sciences than in natural science because of the very nature of the study rather than the nature of the intellectual. In the Arab world, the former sciences are subject to many factors that limit freedom of thought. In addition to social and cultural limitations inherited and internalised, there is the intervention of politics and laws associated with politics, which directly or invisibly draw red lines for research in the humanities and social sciences.

Freedom of thought and of expression, and the laws to guarantee them, are primary enabling requirements for quality scholarship and intellectual development. These requirements ought to be seen not only in a political perspective, but also from the standpoint of knowledge. Serious work is needed to persuade Arab governments that restricting intellectual freedom is tantamount to depriving society of its capacity to generate the meaningful, innovative and productive knowledge that is a precondition for survival and success in the 21<sup>st</sup> century.

## LITERARY AND ARTS PRODUCTION

Literary production, as a field of knowledge, transcends material reality, yet a powerful intrinsic relationship remains between the creative imagination and reality. A work of imagination is both mirror and lamp. It reflects reality and illuminates it at the same time. Literary knowledge is intricately tied to social dialectics. It is a form of knowledge inasmuch as it draws on reality and is inspired by it. It then transfigures that reality in a manner that surpasses what is and looks forward to what can be.

It is important to distinguish between the status of literature and the arts and the status of scientific research and technological development. Compared to the extent of knowledge production in the sciences, Arab societies have produced a wealth of distinguished literary and artistic work that stands up to high

standards of evaluation. The main reason for this divergent performance lies in the essential difference between the prerequisites for literary and scientific production. While it is impossible for an Arab scientist to win the Nobel Prize in physics without having access to the basic requirements of scientific research – such as a serious political commitment to supporting R&D and a social context that values science and scientists and offers requisite facilities, including laboratories, qualified work teams and sufficient financing – it is possible for an Arab novelist to win the Nobel Prize for Literature without institutional or material support. There is no causal connection between prosperity and good literary production. In some instances, difficult circumstances and intellectual and political challenges can actually motivate artists and stimulate literary creativity. Yet while censors cannot defeat creativity itself, they can lengthen the gauntlet to be run in putting creative products into the hands of the public.<sup>1</sup>

Nevertheless, Arab authors and artists face great difficulties of their own. While there may be no conditional relationship between literary creativity and prosperity, yet, for this creativity to flourish and grow and benefit the surrounding environment, artistic expression needs a climate of freedom and cultural pluralism. It also benefits from strong financial and institutional support. These circumstances are not available to most Arab creative artists. In general, Arab artists in all fields (literature, plastic arts, music, theatre, and cinema) work without support from institutions. Success or failure, sustained or sporadic production, depend largely on the personal circumstances of each artist.

## THE SHORT STORY AND THE NOVEL

The rise of the Arab novel and short story are linked to the beginnings of the modern era. They have come to represent a new creative discourse parallel to the movement of society and expressive of its struggles and crises. In the second half of the 20<sup>th</sup> century, the Arab

<sup>1</sup>A paradox of Arab censorship: the novel which won the prize for creativity in the Arab cultural capital in 2002 was banned from distribution in that same capital by the censor. In another case, the novels of the author who won the first prize in the largest book exhibition in the region in 2002 were subsequently banned.

novel and short story achieved a qualitative and quantitative presence as accepted art forms. All Arab societies now contribute to producing both forms, with no substantial difference between countries at the centre and those on the periphery.

Poetry, on the other hand, which is the distinctive literary genre of the Arabs, has been touched by the winds of change. The movement of modern Arab poetry testifies to this. Moreover, while poetry once dominated Arab culture the modern Arab literary tradition has widened to accommodate the novel and short story as well.

There are no accurate statistics on the actual amount of literary production in the Arab world; and the conflicting figures that are available call for prudent treatment. For example, sources note that between 1990 and 1995 in Lebanon, approximately 564 works for children were published, compared to 730 in Egypt (Faisal Hajji, in *Arabic*, 1995). However, there are many books for both children and adults without registered numbers, as a visit to Egypt's National Library would confirm, which renders the process of tracking books very difficult. Turning to UNESCO statistics on the volume of world publications shows that, in 1991, Arab countries produced 6,500 books compared to 102,000 books in North America, and 42,000 in Latin America and the Caribbean, (Figure 3-3.) Book production, including literary production, in Arab countries is evidently far from vigorous in comparison to the size of the population and with other countries.

Book production in Arab countries was just 1.1 percent of world production, although Arabs constitute 5% of the world's population. The publication of literary works was lower than the average level of book production. In 1996, Arab countries produced no more than 1945 literary and artistic books, which represents 0.8% of international production. This is less than what a country such as Turkey produces, with a population about one-quarter that of the Arab countries. In general, Arab book production centres mainly on religious topics and less on other fields such as literature, art and the social sciences (see figure 3-4). A look at book distribution or accessibility shows that, despite the existence

#### BOX 3.4

### The Ambition of Creativity in the Arab World

Our civilisation, with all its deep historical and human roots, is a civilisation of text par excellence. Other deep-rooted civilisations are also civilisations of texts and codes, not only of images. Textual creativity continues to be present in us as one of the inputs of the question of advancement, progress and development in our Arab societies, which are still going through the labours of social liberation, as one of the presumed important outputs of the stages of political liberation, crowned with independence. Since we are in the knowledge era, where knowledge and sciences are boundless and encompass all, we live by the group, as represented by civil society institutions, not by individualism. Our era is one of institutions, not of the noble knight who carries a magic wand, which turns dirt into gold. Amid this huge explosion of knowledge, the Arab world is required to reconsider what human advancement means today and to benefit from humankind's accumulated achievements in knowledge, achievements which demonstrate that the world is a call for existence, not non-existence. How creative are societies that continually recreate their own crises?

Man in our current era cannot live like Albert Camus' "stranger" who leads his own life in cold neutrality and total indifference; or as Heidegger says, "as though human beings were thrown into existence", or like Shakespeare's hero, Hamlet, equivocating without any action on his part; or perhaps like Qais (the mad man in love with Layla), satisfied with mentioning Layla without having her with him. Which half of Kafka's cup do we want, while we look at the status of creativity in the Arab world: the full half or the empty half? Perhaps Ibn Arabi showed us the way, when he said: "You think that you are a small planet, while the whole world is embodied in you."

Obstacles to creativity, or, let us say, the glow of creativity in Arab societies are numerous. They are not isolated or individual but are the outcome of extended and multiple interactions with the various issues and crises of Arab societies. Creativity and knowledge are eclipsed by more urgent issues, such as bread for the poor, literacy, unemployment and the low status and marginalisation of women. Ignorance becomes a tax paid by the poor, and creativity regresses to the backbenches. It is associated only

with occasions on which we may need creativity to beautify an ugly face from among life's visages.

Another obstacle to creativity in the Arab world is its collision with the "prohibited", which prevents a free discussion and debate on issues of politics, sex and religion. Yet talking about one of the taboo issues of this "trinity" does not necessarily imply hostility towards society or irreverence. It is not a form of tactlessness or impudence or blasphemy.

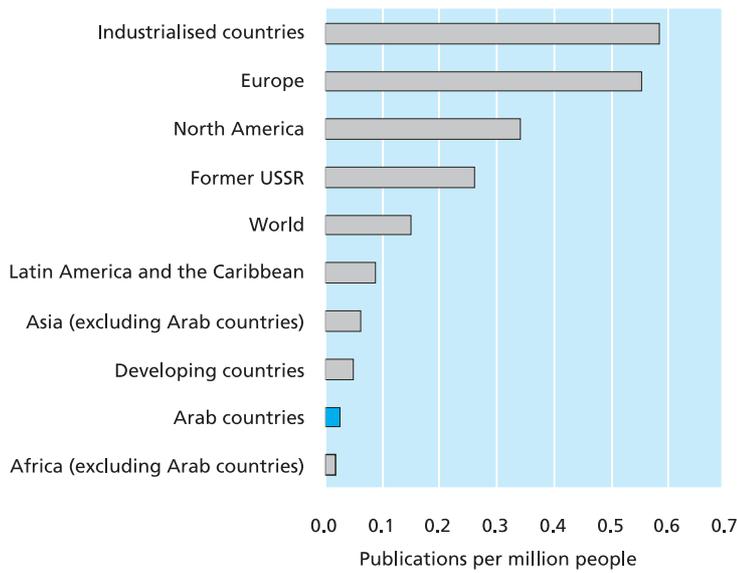
When talking about women's creativity, a question to ask is: Are women absent or "absented" from the intellectual and creative scene? Are they a totem standing on the dividing line between what is sacred and what is tainted? Are they viewed in the collective conscience as ceremonial objects or, even worse, as handicapped individuals whose subjective outpourings call for society's help? This often seems to be so, although studies indicate that the first creative text in history was produced by a woman, i.e., the text of Enheduana's Hymns to Inanna in Ur, beseeching her and calling her the resplendent light and the Guardian of Heavenly and Earthly laws.

We, therefore, welcome studies on the feminine intellect that do not make it the monopoly of women but expand the subject in order to unleash society's creative energies and establish human rights, democracy and human justice for both women and men. We seek to be free from oppression in our social structures, which leads to negative attitudes towards life itself that find pleasure in harming the trees, the stones and the roads. Our involvement in creativity and work and our attachment to humanitarian causes are only one expression of our need for protection and safety, which we had found in the mother's womb, an intimate place neither antagonistic nor painful. Our involvement carries the glad tidings of new births into life, bridging the gap between developed societies at the "end of history" in creativity and knowledge acquisition and the globalisation of human development, which remains a challenge for developing societies that are still trying to find their feet as the least advantaged in the world arena. But we always raise hope.

Refqa Muhammad Doudeen

Figure 3.3

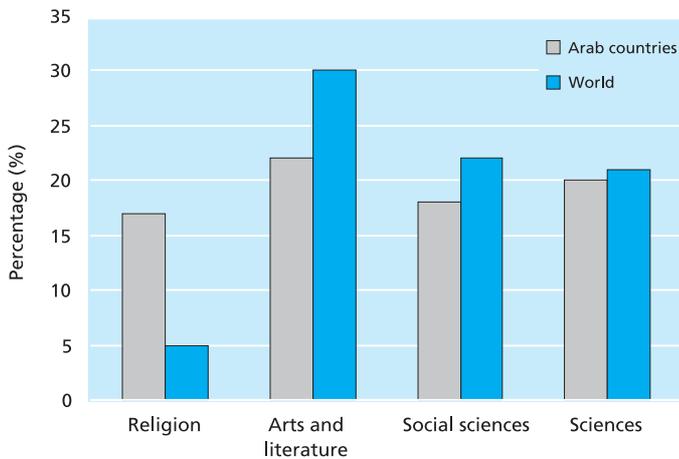
Number of publications – original writing and translation – per million people in the Arab world and other regions, 1991



Source: UNESCO Yearbook, 1999.

Figure 3.4

Relative distribution of published books by field, ten Arab countries and the world, 1996



Source: UNESCO Statistics Institute, March 2003.

*Arab writers often feel remote from their assumed audience.*

of 270 million Arabic speaking Arabs in 22 countries, the usual published number of any given novel or short story collection ranges between 1,000 and 3,000 copies. A book that sells 5,000 copies is considered a bestseller. Once again, there are no accurate statistics on the market reality or on the actual scope of distribution, yet all indicators suggest that the literary book market is modest, even for acclaimed writers such as Naguib Mahfouz or Youssef Idris.

A small readership, generally only among

the educated elite, is one of the most acute challenges facing creative writers in the Arab world. High illiteracy rates in some Arab countries and the declining purchasing power of today's Arab readers are undeniably real factors influencing the size of this readership.

However, would literate Arab citizens who can afford to buy some books for themselves and their families purchase literature to read in their leisure time? There are no accurate statistics on the types of books preferred by Arab readers, but according to many publishers and observers, the bestsellers at the Cairo International Book Fair are religious books, followed by books categorised as educational. This observation reflects on the educational process itself. Issues such as the almost total absence of reading classes in schools, apparently the result of "not having enough time to teach the basic curricula", and neglect of the modern Arab literary heritage should give knowledge advocates food for thought.

Arab writers often feel remote from their assumed audience. Moreover, the absence of a direct relationship with the readers' market undercuts their financial independence, an important guarantee of that degree of freedom in society that most creative writers require. Nonetheless, some Arab authors have been able to reach a wide base of people through films and the mass media (the press, the radio, and television). Many authors are also practising journalists, a profession which helps them to reach readers and to introduce their works to them.

Creating scripts for films is another popular resort for writers. The Egyptian cinema, for example, contributed to introducing Naguib Mahfouz's works to the public during the mid-20<sup>th</sup> century. The author wrote or collaborated in writing screenplays for many popular films. Radio and television have also contributed to the popularisation of literary works, especially those literary genres, such as colloquial poetry, that do not lend themselves to publishing. While such opportunities are not equally available to all authors, their importance as venues for making literary works accessible to the general public should not be underestimated. (Jacquemon, 2003).

Faced with an anaemic local market, cre-

ative writers cherish the translation of their works into foreign languages. Following the award of the 1988 Nobel Prize for Literature to Mahfouz, a great change occurred in the international status of contemporary Arab literature. Translations of Arabic literature experienced an unprecedented boom in the last decade, and Arabic novels and short stories have started to appear on the comparative literature syllabus in universities around the world. Yet in spite of this widening distribution in new markets, Arabic literature still needs active support to achieve the international renown it deserves.

### THE CINEMA

There are film-makers across the Arab world, there are qualified and skilled artists and technicians in the cinema industry and there is adequate equipment for film production. Yet in some Arab countries cinema production does not exist or is very limited. Egypt is the only Arab country that actually has a film industry. Film production started at the beginning of the 20th century, a few years after the invention of the cinema. It had evolved into a full industry by 1919. Important institutions were established, which had a great impact on this new art. Since then, the Egyptian cinema has developed an audience and a market in Egypt and in Arab countries alike.

The first Syrian film came out in 1928, but by 1968 no more than 20 films had been produced. In Lebanon film production started in 1929, but the country did not turn out more than 100 films until 1978. In the 1960s, particularly after the Arab defeat in 1967, a new cultural and critical movement evolved aimed at connecting the cinema with national culture and societal problems. New cinema production appeared in Egypt, Syria, Lebanon, Iraq, Kuwait, Tunisia, Morocco, Algeria and Mauritania: the films of this new wave generally rejected the commercialism of the mainstream industry.

Some Arab countries, such as Egypt, Syria, Algeria and Iraq took important initiatives in the 1960s to support cinematic production. However, they lacked a well-defined cultural policy. As a result, film making receded considerably in the 1980s, and all but disappeared

BOX 3.5

### Arab Books- A Threatened Species

Arab book publishing is in crisis. The number of new publications is falling and the number of copies of each issue printed is becoming smaller, reaching only a few hundred readers in many cases. This trend threatens to make the book industry economically unfeasible. Big publishing houses are avoiding the publication of serious scientific and cultural books, which would contribute to in-depth knowledge.

This may seem paradoxical, since the number of Arabic publishing houses springing up in countries previously without book industries is increasing. But most publishing houses actually confine their activities to small production runs of university textbooks, often of poor quality, or to the production of quick-circulating popular books on ephemeral topics.

The book crisis stems from several factors:

#### **Censorship and the recession of democracy and freedom of expression**

The distribution of any book in Arab countries requires a prior permit from local censors. The strictness of censorship varies from one country to another. While the book industry flourishes in some countries, such as Lebanon and Egypt, strict laws are often being flouted, depending on the prevailing political situation. These laws are, however, applied randomly and strictly against certain titles and authors classified as violating religion, public morals, the regime or friendly countries. Censorship in Arab countries adopts different standards. What the censor in one country considers banned, another censor in the same or a different country considers acceptable. In most cases the censor exercises his/her role based on state instructions. He/she reads the texts searching for certain words.

Authors and publishers are hard put to accommodate the whims and instructions of 22 Arab censors. As a result, books do not move easily through their natural markets. Censorship in this way adversely affects creativity and production.

#### **Low readership**

The Arab Publishers Union notes that readerships in Arab countries are declining, despite the increasing number of educational institutions of all forms. This is attributed to several factors:

- The curtailment of active political life and the failure of major intellectual projects: The state often dictates what readers may read and what authors may write.
- Unimaginative educational systems: many schools and colleges rely on dictation rather than motivating students to search for information in books and other sources.
- Purchasing power: economic stagnation, declining purchasing power and the increasing cost of living, have left the average Arab citizen preoccupied with basic issues of livelihood. Books are becoming luxury items for educated elites and for under-funded scientific institutions, schools and universities. The small number of public libraries, their meagre acquisitions and limited catalogues exacerbate the problem.
- The lack of cultural development plans that encourage reading and instil this habit in individuals from childhood whatever their social background.
- Competition from the mass media: given these other factors, Arab citizens rely more on other, less expensive and less knowledge-based information media to acquire information or entertainment.

#### **The infrastructure for book distribution**

A lack of major specialised book distributors with wide distribution networks, (as enjoyed by newspapers and magazines) further hampers book production and circulation. Books are usually only available in a limited number of bookshops in major cities, reflecting weak demand. These bookshops offset their financial losses by selling popular periodicals, stationery, gifts and other items.

#### **Intellectual property rights violations**

Plagiarism and violations of copyright also undercut book publication. In most Arab countries, deterrent laws, which protect the rights of the author and the publisher, are either absent or are not enforced.

Fathi Khalil al-Biss, Vice-President, Arab Publishers Union

*The challenges to Arab cinema are those of the market.*

when economic crises and security challenges paralysed the region's political economy. On the other hand, other Arab countries have left the film market entirely to the private sector, which became the sole player in production, importation, distribution, the construction of cinema theatres, the setting of prices and the levying of taxes. A few other countries do not encourage a film market at all and ban public shows and halls. It may be noted parenthetically that the new cinema in Arab North African countries would not have flourished had it not been technically, artistically and financially supported by producers from the West, particularly France and Belgium, and had some European countries not opened their cinema and television markets to the newcomers.

This trend has appeared recently in the eastern parts of the Arab world as well, and there were at one time some important experiments in Egypt, which relied on funding from Arab institutions.

Arab films have won awards at international festivals, particularly the Cannes Film Festival in France. The Algerian film, "Chronicles of the Years of Fire" won the Golden Palm award at that Festival. A Lebanese film, "Hors la Vie" by Maroun Baghdadi, won the Jury award in 1991. The Egyptian director, Yusuf Shahin, won the Golden Palm award for his work in the film industry when his film, "The Fate", was entered in the 1997 competition. And the Palestinian

film, "A Divine Hand", by director Elijah Suleiman, won the Jury award in 2002.

Although Arab films are earning a distinguished position in the international arena, the situation of the Arab cinema industry remains well below its potential and depends on individual initiatives.

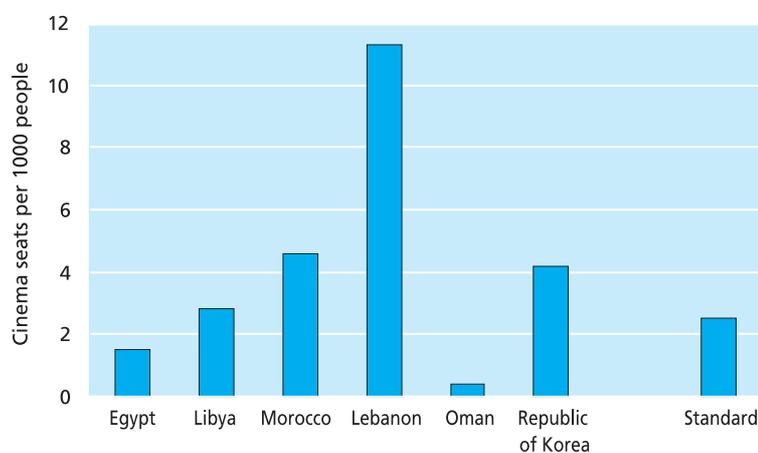
The challenges to Arab cinema are those of the market. The cinema is a popular art form with mass appeal, and the film market is tied to several strata within the audience. In the absence of shrewd cultural policies, standards of taste have been pegged to favour commercial and light films. Distributors have come to control the market for Arab films, with the aim of garnering quick profits. In Egypt, when the state withdrew its support for the cinema industry, film production receded from 60 per year to between 15 and 20. As a result of the general decline of the industry, many cinema theatres were closed down. At a time when the population of Egypt is nearing 70 million, only 165 cinema theatres are still in business, including those situated in "Cultural Palaces". The international rate, by contrast, is one theatre, seating 250 people, per every 100,000 persons. Moreover, the difference in the availability of cinema seats from one Arab country to another is considerable. See figure 3.5.

*THEATRE*

Conditions surrounding the art and production of theatre in different Arab countries vary enormously. Some countries have no theatrical movement at all. Others have a history of theatre that dates back to the beginnings of the modern state, especially Egypt, Syria and Lebanon. In these countries, theatre has passed through phases of recession and prosperity, depending on political, economic, and social conditions.

During the 1960s in Egypt, for instance, government institutions supported theatrical activities that reflected the state's ideological orientation. With the transformation of political direction in the 1970s, the National Theatre turned into a bureaucratic institution, with few exceptions. Lebanon was the centre of an active theatrical movement during the 1950s, which produced some distinguished

Figure 3.5  
Number of cinema seats per 1000 persons in selected Arab countries and Korea in the second half of the 1990s



Source: UNESCO Statistics Institute, March 2003.

works, but this movement withered after the outbreak of civil war in the 1970s. The 1980s, on the other hand, witnessed the rise of commercial theatre in several Arab countries. This trend was profit-driven, and favoured audience entertainment and distraction at the expense of serious drama. Tunisia, however, has a distinguished theatrical tradition, with four independent troupes, supported by the state, which have succeeded in establishing a high-quality theatrical movement. Iraq had a very good theatrical movement, which was destroyed at the beginning of the 1990s after the imposition of international sanctions.

### MUSIC

Arabic music, as a creative knowledge product, is a branch of oriental music. The Arabic language imparts to Arabic song a special character that makes the Arabic musical phrase distinctive. In Arabic arts, music comes second only to poetry. Its importance derives from its association with poetry and songs. Singing was the rhythmical recitation of poetry, based on the unity of Arabic culture, which depended on shared features of Arabic art in all its forms, including improvisation, musical keys and rhythm.

The 20<sup>th</sup> century carried the winds of development to Arabic vocal music through contact with the Western world and as a result of the upgrading of the linguistic structure of the song. This in turn brought genuine contemporary music that gave a rhythmical expression to the written Arabic image. Music was also influenced by the development of musical instruments and techniques, as well as by surrounding educational, social and cultural concepts. This changing environment is characterised by new technology for realising various creative products, which mix human and technological instruments of expression. These new forms pave the way for techno-musical products and reflect the impact of global trends on local cultural traditions and behaviour.

In short, while knowledge production in the arts shows signs of real vitality and quality,

it is small and disproportionate to the size of the Arab world with its human and natural resources. Moreover, artistic production is still largely the outcome of individual initiatives, or conditions favourable to particular artists. Arab institutions and societal structures rarely play an effective role in supporting the arts and creative artists.

### FREEDOM OF RESEARCH AND EXPRESSION AS A CONDITION FOR KNOWLEDGE PRODUCTION

Freedom is a muscle which, when exercised, grows, and when neglected, atrophies. Non-democratic political systems which do not express the interests of the people, which suppress freedom and which ultimately let individuals lose their ability to act and take initiatives, are weak hosts to creative ideas and knowledge production.<sup>2</sup>

Most laws governing higher education and university scientific research institutes include statutes and regulations that curb the independence of these institutions and place them under the direct control of the ruling regimes. This leads to the curtailment of academic freedoms, and encourages academics and researchers to avoid embarking on creative or innovative endeavours that may lead to controversy or political problems. Such laws effectively kill the spirit of enquiry and creativity in researchers. But distinction still remains, and Arab universities host many excellent researchers; however, their distinction is usually the consequence of individual efforts or personal circumstances, rather than of institutional support and, as such, this does not establish an academic tradition or a research orientation

The visual and performing arts have a direct connection to the public, and therefore have a special status among other forms of art. If freedom of speech is vital to the health of the arts and creativity in general, it is an essential prerequisite for these highly "public" arts, which are about communicating freely with people, activating awareness and developing free critical thinking. The art of the theatre, for

*Arab institutions and societal structures rarely play an effective role in supporting the arts and creative artists.*

*Freedom is a muscle which, when exercised, grows, and when neglected, atrophies. Non-democratic political systems are weak hosts to creative ideas and knowledge production.*

<sup>2</sup>Undoubtedly, significant scientific production has been achieved under oppressive regimes, particularly in the natural sciences and technology, most specifically those concerned with armaments, through strong support from national authorities. The benefits of such knowledge production, however, were not universal to all in these societies and production itself was not sustained. The most important example of that is the former Soviet Union.

*The main threat to free literature and art in Arab societies is the dead hand of the state censor.*

*Censorship regulations vary from one art form to another: the more popular the art, the harsher these restrictions are.*

example, is a collective art practised in a public place. One of its basic requirements is the availability of a space that allows a group of persons to practice this art freely and to communicate with the audience directly. If restrictions are placed on freedom of assembly or communication with people, the theatre loses a primary condition for its vitality. Wise cultural policies can prevent this loss.

The cinema, though not a live medium, also speaks to the soul and mind of the audience. It projects feelings, ideas, and visions that can enrich the audience's life experiences and provide insight into its surrounding reality, history or inner worlds. However, not all Arab countries pay due attention to the cinema as an expression of culture and creativity. At the same time, cinematic production is not only an artistic endeavour, but also an industry, investment and a market. That dimension of the medium is also widely neglected by the state and dominated by private distributors. Since the cinema is a wide-reaching popular art, the societal power structures in Arab countries have formed an ambivalent relationship with the medium: they may prohibit or prevent its production, but have no qualms about its consumption for commercial profit.

Arab film production is subject to commercial rules and regulations that treat the cinema as a consumer commodity. There are no special tax incentives for the cinema that recognise it as an art form and a tool of knowledge. In fact, some Arab countries impose high taxes on the cinema, and treat it as an entertainment commodity on the same level as night-clubs and cabarets. The same logic is applied to theatrical performances: very high taxes are imposed on theatre tickets, a cost that undermines the sustainability of private troupes.

The degree of social freedom also affects the accessibility of literary works, and the extent of their circulation amongst Arab countries. Publishers face severe obstacles to the distribution of books in the Arab world for several reasons, most important among which are the laws and regulations governing the movement of books across Arab countries. The Arab book is often treated as a banned commodity, and is usually subject to censorship and bureaucratic procedures that place

exorbitant costs on publishers. These laws inevitably hinder book publishing and circulation. As a result, some Arab scholars resort to shopping in bookstores in France or the United Kingdom to gain access to Arab literary works, an option hardly available to most under-paid researchers.

Censorship substantially hinders the creative process. Though no society in the world is completely free from some form of declared or hidden censorship, the types of official censorship in Arab countries exact a heavy toll on the arts in general. Authorities that impose censorship over the arts vary. Some social groups assume the role of the censor over literary and artistic production by protesting in the press over what they consider infringements of socially appropriate standards. These groups sometimes even resort to the courts to stop a film or confiscate a book. Members of the same profession may also practise a form of censorship over each other. But the main threat to free literature and art in Arab societies is the dead hand of the state censor on ideas that are not compatible with its political direction, or that may stir social unrest, or mobilise people over a political or social issue. Regimes that do not permit political diversity or social plurality create fertile ground for the rise of extremism and regressive thinking that is hostile, not only to the arts and artists, but to social progress as a whole. Ironically, tightening the state's grip on literature and the arts loosens the reins on regressive currents opposed to human development.

Censorship regulations vary from one art form to another: the more popular the art and the greater its ability to communicate directly with the audience, the harsher these restrictions are. In the theatre in Egypt, for instance, a script is subject to revision by the censor as a condition for receiving a permit to perform. Rules of censorship over the theatre are loosely phrased and permit various interpretations according to the leanings of the censor and the ruling regime. Usually, the rejection of a text is justified by claiming that it violates public morality and the supreme interests of the state (Sayyed Ali Ismail, *in Arabic*, 1997). In this way, censorship effectively suppresses criticism or innovation, and thus contributes to deepening the current crisis of Arab theatre.

Cinema production, in Arab countries, is also subject to censorship laws and regulations that place many obstacles before creativity and the treatment of vital subjects. In addition, because cinema producers cannot cover their expenses exclusively from the local market, many take into account the censorship laws not only of the producing country, but of other Arab countries as well.

Arab censorship bridles Arab artistic creativity and denies Arab artists their native inspiration. A fundamental social function of the artist is to challenge social, political, and ideological orthodoxies and expose the untested received wisdom dominating a society. Innovation and critical questioning of the status quo are the very sources of creativity. Arab artists are confronted with unbending social, political and ideological frameworks that are above accountability, and that treat innovation and change as signs of disintegration and unrest. Moreover, some dominant intellectual elements in the Arab world hold nostalgically to the past, and are ambivalent about the present and the future. These elements fear innovation and oppose it fiercely. Thus, the Arab artist is surrounded by ideological and social currents that view and treat art with suspicion and is subject to the control of political regimes that sweep social challenges under the carpet in order to maintain their dominance.

Fear of innovation and change is also one of the driving forces behind policies that stifle the creative capabilities of school and university students. A social culture that encourages and appreciates art, creative writing and music

sees to it that these subjects are widely taught. There are entire generations of Arabs who have not learnt how to play a musical instrument, and who have not read literary works because they were not accustomed to do so in school. Creative pursuits taken for granted in developed country schools have simply been neglected in the Arab world, with damaging results to the creative potential of its people.

Finally, it is important to point out that strained international relations create certain obstacles to knowledge creation. The unease in Arab relations with some Western countries in modern times has negatively affected knowledge production. When an Arab writer criticises his or her society, he or she is often accused of promoting the interests of foreign powers against the interests of the nation, because (so the argument goes) by exposing the weaknesses of society, the writer is supplying those powers with ammunition for attacking Arab countries. At the same time, Arab writings critical of Arab countries have been mobilised to aid self-serving policies towards the Arab world. The hijacking of Arab art, literature or research to serve vested interests presents its own problems for Arab scholars, scientists and creative artists and, ultimately, diminishes the impact of their work for human development at home and abroad.

In short, a new Arab renaissance requires a new policy environment that liberates human capabilities in the sciences and arts by actively promoting freedom, creativity and innovation. Without that prerequisite, the Arab knowledge society will remain an elusive dream.

*When an Arab writer criticises his or her society, he or she is often accused of promoting the interests of foreign powers.*

*This chapter suggests that Arab countries possess significant human capital, which under new circumstances, could serve to lead, support and sustain a knowledge renaissance centred on knowledge production. It observes that an unsupportive policy and institutional environment for scientific research, an archaic environment for developing and encouraging education and a hostile environment for scientific and artistic freedom and creativity could negate such progress.*