PART II

Section four: a strategic vision- the five pillars of the knowledge society

The last chapter in this Report outlines a strategic vision built on five pillars of the future Arab knowledge society. Its chief goal is to frame a forward-looking and action-oriented discussion on knowledge in Arab countries that takes into account their particular features and circumstances and that leads to specific operational proposals for the advancement of Arab human development.

CHAPTER 9

A strategic vision: the five pillars of the knowledge society

This final chapter continues the practice adopted in the first AHDR (2002) of charting major milestones towards a better future for Arab countries built on human development.

The chapter does not purport to offer ready recipes for building human development in each and every Arab society. Rather, it draws from the preceding chapters a number of common directions that Arab societies could consider to achieve that goal. The term "society" is used deliberately, rather than "country" or "state", in order to emphasise that the "society" concerned could be part of an Arab state or a group of states or the entire Arab world.

Building human development calls for social innovation, a process that can only be led and undertaken by the people of each Arab society themselves, for themselves. The Report therefore stops at delineating the main features of what could be considered a strategic vision[1] for the task of building human development. This vision needs to be taken up, nurtured and debated by human development advocates within Arab society, recognising and paying attention to dissenting views. Where the vision is adopted, a consensus on priorities needs to be accompanied by decisions for implementing the strategic vision under the specific conditions of that society. Indeed, this process constitutes the first stage of social innovation. It can stimulate the emergence of a societal movement for unleashing innovative human potential and utilising this potential in building human development.

The future map of the Arab world must be drawn from within the region. No externally derived construct can elicit the conviction and guarantee the support of the Arab peoples in the long run. The present attempt by Arab intellectuals to articulate a strategic vision of the

Arab knowledge society is a contribution to such internal efforts to reshape the underpinnings of Arab human development.

THE STATE OF KNOWLEDGE IN ARAB COUNTRIES AND THE CONSEQUENCES OF PERPETUATING THE STATUS QUO

Knowledge in Arab countries today appears to be on the retreat. Ingrained structural impediments stand in the way of building the knowledge society in the region. Current political and social orientations diminish the role played by knowledge in Arab societies, as previous sections of this Report have indicated. While knowledge in the region stumbles, the developed world is racing towards knowledge-intensive societies. This trend will further accentuate the asymmetry of world knowledge development and endow a few countries with near-supremacy in knowledge production and consumption. Based on their present performance, Arabs would remain in a marginal position in this next phase of human history. This position would be the logical consequence of a decline that has lasted for seven centuries, while much of the world made enormous progress in developing knowledge and human welfare. Continuing with this historic slide is an untenable course if the Arab people are to have a dignified, purposeful and productive existence in the third millennium.

Without a strong and growing contemporary knowledge base of their own, Arab countries will be absorbed into the international knowledge society as passive consumers of other countries' proprietary knowledge, technology and services. Without mastery of the capabilities that knowledge brings, they will re-

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[1] Which, by definition, does not rise to the level of a "strategy".

main incapable of establishing their own space and growth under the often one-sided and restrictive trade, investment and intellectual property rights regimes of a world that is old and new: old in terms of human struggle and new in terms of its rules of engagement. On the other hand, Arab countries can avert this passive fate by indigenising knowledge and technology and developing the necessary absorptive, adaptive and innovative capacities and structures, which offer them the opportunity to participate proactively in the vigorously growing global knowledge society from a position of dignity and strength.

Yet individual Arab countries are unlikely to go far in that direction on their own. Strong Arab co-operation that approaches regional unity through "a Free Arab Citizenship Zone" will not only bolster the negotiating powers of Arabs in the world arena and help reduce monopolistic pressures; it will help Arabs to benefit from opportunities created by globalisation and to manage its risks.

THE FIVE PILLARS OF THE KNOWLEDGE SOCIETY

The strategic vision outlined below rests on *five pillars*, the building blocks of which were laid down in the preceding chapters and in sections of the first AHDR.

BOX 9.1

Mustafa Al-Barghouthi – The Road to the Future

The Arab peoples and states are facing fateful challenges at a time of accelerating changes which do not wait for those who are slow or lax in defending their interests.

It is quite clear that the dilemma of Arab development will not be solved without focusing fully on human development – the development of the citizen and his/her role in economic, social and political life.

This calls for the achievement of four goals, which are interdependent and indispensable.

First, the formation of the political citizen and his/her participation through the diffusion and deepening of democratic values and political participation, beginning with the rule of law, independent judiciary, equality before the law, freedom of political action and thought, freedom of the press, political plurality and free democratic elections. Add to that the freedom of civil society institutions from governmental control and the freedom to organize, innovate and develop in society at large. Political participation, from a developmental point of view, means the freedom of citizens to take part in policy-making and contribute to the determination of economic and social decisions affecting them.

The second goal is the comprehensive development of education, beginning with pre-school education and going through higher education. This will not be achieved without opening opportunities for learning to all segments and classes of society, whether through compulsory education or through the establishment of national funds to provide loans for university education in which students enjoy equal rights regardless of their economic, social and political backgrounds. This goal cannot be fully achieved without the de-velopment of a plan to develop scientific research centres and encourage research.

The third goal is quality health care for all. This does not mean flooding countries with private commercial hospitals and specialized centres for the elite, but developing a comprehensive system of high-quality primary health care, health insurance and social security, mother-and-child care, care for the poor and people with special needs and full concentration on the principles of prevention and healthy life styles instead of wasting resources on medical-biological approaches, which have proven their failure. This entails believing in the simple rule that health is not simply the treatment of illness, but the removal of its causes.

The fourth goal consists in taking the initiative and moving from being reactive to proactive in all walks of life. Democracy, participation and freedom are rarely given. They are most often wrested in the struggle of those who believe in them. This requires that citizens take on the challenges of demanding their rights and calling for sound policies. The same applies to Arab countries in their international relations. Nobody is going to secure their interests for them unless they take the initiative and work for these interests.

Perhaps human development in the Arab world will not be realized without solving the dilemma of effective participation by youth and women. Youth constitutes two-thirds of the Arab world's population. They are mostly denied opportunities to participate and the freedom to innovate and take the initiative. Most women are still marginalized. These two segments of the society constitute a huge human reservoir.

The Palestinian people are perhaps facing the most vicious challenge in their struggle to end aggressive occupation and settlement and to win what all other peoples already have – freedom, genuine independence, sovereignty and the right to their own territory, borders, destiny and future.

A just peace and effective development in our region will not be realized unless the Palestinian people establish a real state with full sovereignty and until the Palestine refugee problem is solved in accordance with United Nations resolutions. The idea of an independent state cannot be transformed into another transitional stage in the form of autonomy without borders or sovereignty. We have learned from experience that avoiding real issues, such as ending the occupation and settlement and the issues of Jerusalem and refugees is only a prescription for more suffering in the future.

While the Palestinian people are struggling to build a national home, citizenship, and real democracy, they have succeeded - in the midst of a ferocious struggle against occupation, and despite huge human sacrifices - in building pioneering human development models, which are copied in many countries. This is due to their positive creative spirit and their rejection of frustration and despair.

The Palestinian struggle is not a conflict between two parties negotiating a difference over percentages. It is the crucial issue of people who seek to achieve what has been achieved by all peoples on the face of the earth: freedom, independence, self-determination and a dignified life in peace and security. This is the natural basis for human development anywhere in the world.

1. UNLEASHING AND GUARANTEEING THE KEY FREEDOMS OF OPINION, SPEECH AND ASSEMBLY THROUGH GOOD GOVERNANCE

Recent history shows that it is undoubtedly possible to achieve significant scientific and technological advances under oppressive regimes, particularly in natural and micro-sciences, and more particularly in the design and manufacture of armaments through strong support and substantial funding by national authorities. Enlightened dictatorships have also hosted knowledge breakthroughs in technical areas, such as economic production, as in the case of South Korea in an earlier period.

But in such cases knowledge gains rarely, if ever, extend into the human and social sciences, the arts or literature. Moreover, gains from targeted knowledge production do not reach all segments of the societies concerned. In other words, knowledge does not permeate the entire society and does not improve people's welfare. An example of this in the Arab world is Iraq; in the wider world, North Korea suggests itself as another case.

Moreover, such knowledge production is not sustainable because society does not have the capacity to continue to provide the necessary resources so long as other elements of the social structure remain weak. The most instructive example in this regard is the former Soviet Union, which collapsed because, among other reasons, it was unable to meet people's basic requirements or to continue to fund its military industries.

From the perspective of human development, scientific advances under oppression are related to the curtailment of social freedoms and choices, which runs counter to the very concept of human development itself.

If Arabs aspire for advanced knowledge in all spheres of creativity and innovation, freedom is a must. If Arabs seek human development through knowledge, freedom is the first and all-defining step.

Thus, freedom and knowledge are central equations of human development. Freedom of opinion, speech and assembly are the *key* freedoms that guarantee other forms of human liberty. A climate of freedom is an essential prerequisite of the knowledge society. These freedoms ensure the vitality of scientific research, technological development, and artistic and literary expression, all of which are means of producing knowledge. They cannot be restricted or curtailed except under very limited circumstances provided for by law, *(that is, after the law is reformed to take into account the provisions discussed below)*, and by the International Bill of Human Rights (IBHR).

The true protection of key freedoms will involve *ridding constitutions, laws and administrative procedures* of every restraint on freedoms of opinion, speech and assembly; it will also require a guarantee that legal provisions and procedures *comply with the IBHR.* In pressing these changes through, lawmakers, jurists and peoples' representatives in Arab countries should not hesitate to model their legislation on that of countries with august traditions in the protection of freedoms[2].

There can be no guarantee of freedoms without the stable rule of law as the only basis for governing all human conduct. Moreover, the execution of the provisions of the law protecting freedoms must be in the hands of an *upright, efficient and genuinely independent judiciary.* It is also imperative to end the era of *administrative control and the grip of security agencies* over the production and dissemination of knowledge[3] and the various forms of creative activity that are the foundations for the knowledge society in Arab countries.

The legislative, executive and judiciary powers of the Arab world have a weighty responsibility to guarantee freedom. But that responsibility does not stop with them. Official and unofficial religious circles have also sought to muzzle freedom of opinion and speech through censorship, banning and libel. It is necessary to recall here a host of Qura'anic injunctions that condemn these practices: "Let there be no compulsion in religion." (*Al-Baqarah*, 256), and "wilt thou then compel mankind, against their will, to be-

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[2]This may help them atone somewhat for the preoccupation of some with inventing laws and procedures limiting freedoms in previous eras.

[3]Among the crudest forms of this restriction is the limitation of the freedom of researchers in collecting data through fieldwork, which stifles serious scientific research and hobbles solid scholarship in the social sciences and humanities. Not less crude, though, is the banning of views and information opposing the ruling regimes in the official mass media.

lieve?" (*Yunus*, 99). Indeed, if creed is based on free choice, it is only logical that freedom of opinion and speech should not be forced. In that regard, it is helpful to remember "…"Invite [all] to the Way of thy Lord with wisdom and beautiful preaching; and argue with them in ways that are best and most gracious." (*An-Nahl*, 125) and "Wert thou severe or harsh-hearted, they would have broken away from about thee…" (*Al 'Imran*, 159).

These texts provide the authority for a more tolerant and less narrow-minded view of the role of key human freedoms, as sanctioned by Revelation itself.

Knowledge in itself is neutral. It can be used by those in power to serve the interests of authority or it can liberate the weak, the uneducated and the deprived. Science, like art, needs enlightened patrons and champions to assure its independence. Those who carry out scientific research cannot afford its costs, yet science cannot be left solely under state authority. For too long, political regimes have sought to control research and educational institutions, particularly those of higher education, and to manipulate scientists either by reward or intimidation. The hijacking of science by politics is indeed one of the reasons for the decline of the knowledge system in Arab countries. It has opened the sector, its programme and priorities to domestic and foreign interference.

This does not mean, however, that the Arab knowledge system should turn in on itself, a move that would set back knowledge acquisition. It rather points to intensifying Arab and international co-operation in knowledge acquisition along disinterested scientific and intellectual principles. It also underlines the essential roles of non-governmental R&D organisations at the national, regional and international levels and the importance of public-private partnerships for the advance-

ment of research and education.

This Report has exposed the harsh, and severely polarised, societal environment surrounding science and scientists in the Arab world. The difficult choice facing many scientists and scholars in these countries is whether to be "intellectuals", i.e., thinkers, adopting science and knowledge as a means of liberating the weak and advancing the nation; or to be affiliated with the status quo, the ruling regime or even foreign interests in one degree or another. Scientists and scholars who enlist in current power structures, in the region or abroad, enjoy significant financial and political benefits. "Intellectuals" on the other hand, often lack recognition and remuneration and are frequently marginalised by the authorities[4].

It is natural that those who opt to be dedicated intellectuals and socially responsible scientists are few, and that those who persevere on this path are even fewer. Yet the results of this quandary have cost Arab societies dearly. They have, in effect, caused these societies to forfeit the noble mission of science and knowledge as a means of liberation and progress, and have thus brought about the decline of human development in the region.

In other words, society has a massive stake in guaranteeing intellectual freedom. The expansion of freedom in Arab countries begins, first and foremost, with a dedicated effort by its first beneficiaries, i.e., the intellectuals and the producers of knowledge. So long as these groups are silent, complacent or indifferent about their own scope, the cause of intellectual freedom will lack credible advocates. The battlefield for freedom is large. It is the theatre of courageous, groundbreaking and sometimes fierce societal engagement by intellectuals and producers of knowledge. Individual actions matter, but an organised campaign centred on avant-garde knowledge organisations is likely to be more successful.

Freedom, as a human entitlement, requires societal structures and processes that create it and protect it at the same time, while nurturing its growth and advancement. Those structures and processes are epitomised in systems of good governance and embodied in the *con-*

BOX 9.2

Judge Al-Djorjani (290-366 A.H.): The Dues of Science

I would not have given scholarship its due, if, whenever a temptation presented itself, I used scholarship for my own ends. If scholars preserve scholarship, scholarship will protect them. If they glorify scholarship, it will become august. But they have abused scholarship and in so doing they have debased themselves. They have smeared its face with greed until it frowned.

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[4]The choice is perhaps most difficult in the social sciences and the humanities, with their potential for manipulating minds and masking reality. Yet serious social science is a difficult profession and one that is unrewarded in backward societies. The true scholar in this field seeks to spread his/her ideas for which there are no outlets save the mass media, which are often muted under heavy authoritarian control.

certed efforts of the state, civil society and the private sector. Good governance is based on the following tenets (First AHDR):

• It protects freedom in a manner that ensures the expansion of people's choices.

• It is built on full representation of all the people.

• It is fully institutional.

• Its institutions function with efficiency and complete transparency.

• Its institutions are subject to effective accountability, under the division and balance of power, directly by the people at large through periodic, free and upright elections to parliamentary representation.

• Just law, protecting freedom and rights, prevails equally over all.

• A just, efficient, and totally independent judiciary implements the law.

When all of these elements of good governance are in place, freedom cannot perish, but if even one is absent, it remains at risk. Noticeably, the peaceful rotation of power is both safeguarded and guaranteed by these underpinning tenets.

Good governance guarantees the rationality of decision-making, which in the first instance serves human development. It also increases the demand on knowledge by all social sectors, which pushes the knowledge system forward.

Since Arab governance is quite far removed from the prescribed model, its character as a prerequisite for freedom would seem to make the latter unfeasible, if not impossible. But a more appropriate reading of this link is that neither good governance nor freedom will be achieved without a long, hard and dedicated struggle. Yet history, demography and the majority of Arab people are on the right side of that struggle, and the opponents of this growing movement would do well to weigh the consequences of further delaying the march towards greater freedom in the region.

2. DISSEMINATING HIGH QUALITY EDUCATION TARGETED ON EDUCATIONAL OUTCOMES AND LIFE-LONG LEARNING

A Greek saying (Protagoras) underscores that man is the measure in all things. Human development embodies this principle from beginning to end. Human beings are the creators and carriers of human development and knowledge is the capability that empowers them to be both. Yet if knowledge is to be acquired for this purpose, Arab countries will have to undertake deep and serious reform of the educational system. The following guidelines point to the chief priorities:

Improving learning in early childhood

Seeds planted in early childhood will influence the quality of knowledge that a society harvests more radically than any comparable investment, while encouraging the blossoming of new generations of intellectually open, active and talented citizens.

This objective can be achieved by extending education to the early stages of childhood and *into* Arab households. This entails broadening educational systems to focus on the cultivation of talents during the early years of life. It is crucial, however, to ensure that educational systems are not heavy-handed and do not place additional fetters on the growth of human talent at this critical stage, since child development depends on rich mental and emotional stimulation (first AHDR). Recourse should be made to the best international practices and experiences in early childhood learning, in parental education and in sound principles and techniques of pedagogic nurturing. Another thrust is to provide fresh and stimulating educational materials for infants and young children *inside the family*, using ICT, audio-visual media and other modern learning tools.

Universal basic education for all, extended to grade ten at least

This step begins with eliminating all forms of deprivation from basic education, notably those suffered by weaker social categories: girls and the poor.

Extending this approach will require creative solutions leading to the development of an alternative educational system that can produce more efficient and higher quality education, and at an appropriate cost. This is an area open to more research, as well as to more social and financial investment, including the scrutiny and reallocation of public budgets.

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Creating an efficient system for life-long learning

An institutional system for adult education (continuous education) that is highly flexible and ever developing is required to achieve two goals: to combat effectively all forms of illiteracy; and to furnish graduates of the educational system with opportunities to enlarge their knowledge, sharpen their skills and develop the new capabilities demanded by a competitive and constantly changing employment market.

Women merit priority in adult learning, not least because among those many who suffer from illiteracy in the Arab world women are the most affected. To speak of creating the knowledge society in the Arab world is to understand that high illiteracy rates among adult Arabs, especially women, are intolerable. A serious campaign to stamp out illiteracy in the region within the next decade is a task for all Arab countries and joint Arab organisations. This task will require solid planning, qualified and sufficient personnel and the necessary resources to establish effective adult education schemes in every Arab country. With literacy standards falling in the regular educational system, those graduating from that system should also be eligible for remedial coaching. Such an important project is a natural and proper sphere for joint Arab cooperation.

Raising the quality of education at all levels

The quality of education, a long neglected priority in Arab societies, is as important as the availability of education in building the foundations of knowledge. Improving quality will involve inculcating basic capacities for self-teaching and developing people's cognitive, analytic and critical faculties, all of which spur creativity and innovation. It implies a profound reform of Arab educational systems, particularly education methods, which need to become more student-centred, through teams and projects, and more self-evaluating in all dimensions of learning.

Quality assurance also requires adopting *independent* and periodical evaluation of quality at all levels of education, particularly through comparisons among Arab countries and with reference to developed countries as well.

High illiteracy rates among adult Arabs, especially women, are intolerable.

The government's responsibility for higher education does not require higher education institutions to be government owned.

Special attention to improving higher education

Higher education acquires special importance in building advanced knowledge and skills, especially in connection with R&D.

Higher education institutions produce the knowledge workers in a society, notably its R&D scientists, technologists and researchers. They can, if suitably endowed, also become centres of state-of-the-art research and knowledge production themselves. Yet the present state of Arab higher education prevents it from contributing effectively to the creation of a knowledge society.

Four main complementary policies are urgently needed for a serious reform of higher education:

1. **Governance**: The continued responsibility of the state should be affirmed and recast such that higher education is liberated from the domination of both government and the unregulated profit motive. The government's responsibility for higher education does not require higher education institutions to be government owned. In several cases, independent boards with quadripartite representation (the state, business, civil society and academia) could govern higher education through public-private partnerships. The profit motive should be regulated to ensure that the public interest is served, and the creation of non-governmental, non-profit educational organisations ought to be encouraged vigorously.

An independent Arab organisation for the accreditation of higher education programmes would be a major step in this direction. The UNDP/RBAS project on quality assurance in Arab higher education institutions, whose initial results were summarised in Chapter 2, could serve as the nucleus of such an organisation.

2. *Restructuring*: A versatile and flexible system consistent with rapid and ceaseless change in the market for knowledge and jobs should be established in higher education. Such a system should turn out graduates who are capable of continuous self-teaching and of taking their full part in societal progress. Versatility and flexibility are two characteristics that will enable the higher education system to respond to fast changing local and global needs.

In order to achieve versatility, the basic

programmes of higher education institutions should not be replicas of old courses. More attention should be paid to scientific fields and organisational structures that promote knowledge. Such fields include natural sciences and technology development, which receive little attention in the existing educational system. *Higher education should provide individuals with learning opportunities for life.*

In view of the accelerated obsolescence of technical skills in the modern world, *higher education should provide recurrent education to individuals. Collaboration with the state, private business and civil society holds the key.*

Versatility also means an emphasis on the productive function of higher education institutions. This function can boost both the financial and research resources of the institution. Autonomous, multidisciplinary research-and-development centres should be created, in active partnership with the state, business and civil society.

Flexibility, on the *individual* level, means the freedom to drop out and return to various higher education institutions. On the institutional level, flexibility means that the structure of institutions and the content of the programmes they offer are continually revised by review boards to guarantee a quick response to local and international developments. As noted, quadripartite representation in the governance of higher education institutions would be of great value in supporting this type of flexibility.

3. **Expansion**: A great gap still exists between Arab countries and advanced nations in the spread of higher education. This means that, for developing countries, there is no real trade-off between spending on higher or basic education. Both are sorely needed. Building the knowledge society in the Arab world requires the expansion and reform of higher education.

Two important considerations should govern the expansion of higher education: first, it is necessary to end discrimination against weaker social groups, especially young women. Next, account must be taken of the failures of uncalculated expansion in existing institutions, which have led to a tremendous drop in quality. Higher education institutions, old and new, should enjoy high quality, diver-

sity, and flexibility, and should focus on the fields and institutional forms required for scientific and technological progress.

4. **Quality**: A powerful shake-up to improve quality in Arab higher education is long overdue. Quality should be improved in present institutions and no new institutions, public or private, should be created unless they can provide better standards of quality. Independent accreditation organisations should be enlisted to help ensure the quality of higher education programmes.

Rapid and committed implementation of the above would substantially raise the quality and outcomes of Arab higher education. Other priorities that are central to such change are: sufficient and sustained funding for quality education and quality research; improved access to knowledge for students through ICT; and enhanced remuneration for teaching and research staff. None of these measures will however succeed without the overhaul and development of curricula at all educational levels, coupled with appropriate teaching methods that develop critical thinking and creativity.

3. INDIGENISING SCIENCE, UNIVERSALISING RESEARCH AND DEVELOPMENT (R&D) IN SOCIETAL ACTIVITIES AND KEEPING UP WITH THE INFORMATION AGE

The limited achievement of Arab countries in the fields of science and technology is an outcome of several factors: the illusion that importing technology as embodied in products and services is equivalent to aquiring knowledge; policy neglect of basic research in the region, reflected in its under-estimation and under-funding; *rentier* science and technology importation; the weakness of national knowledge systems, and, on the regional level, insufficient Arab co-operation. A serious programme to confront the current crisis must follow a dual strategy: internal reform in every Arab country, on the one hand, and deepening co-operation among Arab countries in R&D on the other.

The process of adapting and localising technology starts with leadership reflected in a

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cogent national science and technology policy to attract private investors and a supportive fiscal and regulatory regime to encourage enterprise development. It requires the expansion and sustained financing of local R&D in target technology sectors and substantial public and private investment in human resources and professional skills development, especially in mathematics, the sciences, ICT and management. It calls for technology management policies for selecting, adapting, creating and commercialising technologies in response to market signals and opportunities for competitiveness. It entails organisational changes within industries and firms to internalise innovations, raise value added and instill flexibility. Above all, local technology development requires a closely networked national innovation system to tie key public, private and international actors together.

Successful adaptation and localisation takes place over a long period of maturation. Nevertheless, late-starters can benefit from global technology by participating in global production chains on the basis of competitive edge. At the same time, they should focus on building agile workforces and sustaining economic, social and technical innovation in order to convert acquired products and processes into new, useful and marketable technologies that serve national and regional human development. Vision, creativity and risk-taking are indispensable to that process.

As part of this process, Arab governments must support Arab R&D centres and technical consultancy firms so that they can grow and offer services comparable to those sought by Arab countries from firms abroad.

Most of what is produced in the Arab world is not competitive with what international markets offer, due to quality and cost considerations. It is essential to accelerate the standardisation of specifications and quality control in the region and to subject all Arab products to those standards.

At the same time, the link between human power and educational institutions on the one hand, and human power and professional associations in Arab countries on the other, is much weaker than the minimum required for the efficiency of the R&D system. This requires establishing and strengthening all forms

of pan-Arab connectivity in all fields of R&D development, utilising ICT formats and channels for fast communication.

At the national level, the goal should be to pull together scientific and research systems as a prerequisite for coming together at the regional level in order to benefit from collaboration and economies of integration and scale. To that end, countries need to develop long-term policies on scientific research, reprioritising their budgets to increase funding for R&D and creating triangular cooperation between R&D institutes, universities and industry. Central to such policies is the realisation that various components feeding into R&D must be developed simultaneously. These components include educational systems and standards, basic and applied research institutions, ICT infrastructure, services and information systems, funding institutions, professional societies, consulting services, technical support systems and science education for students and the public at large.

Policies to strengthen the weak articulation between these components of the knowledge system would help Arab countries to consolidate their national knowledge bases and to sustain higher rates of growth and higher rates of technology acquisition.

Technological development in Arab countries should centre on technologies needed in the region, and those where Arabs enjoy a degree of competitive advantage. Technologies related to oil and natural gas, their by-products and to improving their environmental impact are one such group. ICT, renewable energy technologies, such as solar energy and wind, and water desalination are others. The establishment of regional "centres of excellence" in R&D, with research focus areas selected according to country-specific needs or competitive advantages, is a high priority. The benefits that could accrue from these orientations would, of course, be maximised through close and effective Arab co-operation.

The efficient implementation of these policy directions requires essential contributions by the *state* in building the knowledge society. The basic functions of the state include priority setting, designing policies, enacting laws and procedures, providing tax incentives, allocating resources and facilities. The state can

also initiate innovation: it could make a major contribution by instituting R&D as a fundamental activity in public, private, state and civil society organisations and enterprises.

Civil society and actors at the household level can play an influential role in establishing and supporting an effective non-governmental institutional structure to stimulate knowledge efforts throughout society as a whole. A step forward would be to modernise and energise the traditions of *zakat* (alms giving) and *wakfs* (religious endowments) to build human development.

Some specific suggestions for public and private action, already tried with some success, include: creating national business councils to provide a common interface with multinational firms and investors; financing R&D, either through grants to non-profit organisations or through soft loans to profit-seeking enterprises, payable only when the R&D activity increases business revenues; allocating a percentage of business profits, whether public or private, to finance R&D activities within the enterprise and/or in society at large; outsourcing non-core processes in firms to reduce fixed costs that cannot be recovered over short production cycles; and promoting the start-up and operations of venture capital firms and business incubators.

Keeping abreast of the Information Age

The Arab world needs to join the ICT revolution much more decisively. Yet certain special Arab features call for a special model for ICT development. Perhaps the most important of these is the dimension of language, particularly after the spread of the Internet. Indeed, *the Arabic language can become one of the constitutive elements of an Arab information bloc* that could effectively meet the information challenge faced by Arab countries.

The Arab world is facing the challenge of ICT at a time when it is also confronting an acute economic crisis, a situation requiring maximum care in allocating and rationalising the use of resources. Required as well is a strong commitment to sharing information resources on both the national and regional levels. At the national level, action to popularise ICT as a tool for knowledge acquisition should focus on (a) boosting literacy, especially

among women; (b) lowering monopolistic barriers for Internet providers and telecommunications developers; (c) lowering other costs affecting access to the Internet; (d) overcoming restrictions on ICT access by gender, economic capability, geographic location or social conditions; (e) using ICT as a tool for life-long learning.

At the regional level, *a strong pan-Arab information policy* could be founded on the following strategic principles:
• Adopting a supra-sectoral approach, i.e., policies that respond to the growing integration of the information, media and telecommunications sectors.
• Adopting a cultural approach to the information industry while recognising the computerisation of the Arabic language is a basic springboard for Arab ICT development and applications.
• Emphasising Arab information integration, especially the principle of sharing resources and data.
• Giving priority to the utilisation of ICT in the fields of education, training, and public health and building an infrastructure for the Arab cultural industry.

The Arab world needs to join the ICT revolution much more decisively.

• Developing concrete regional action plans for ICT development, with visible, high-level government, donor and private sector support.

4. SHIFTING RAPIDLY TOWARDS KNOWLEDGE-BASED PRODUCTION

In Arab countries, even in non-oil countries, the socio-economic structure is dominated by a *rentier* mode of production and behaviour. In this mode, economic value depends on depleting exhaustible natural resources. Moreover, contrary to popular impressions, most Arab countries and most Arabs are not rich. The first AHDR noted that all Arab GDP combined does not exceed that of a single medium-sized European country such as the Netherlands or Spain.

Furthermore, the distribution of economic returns, whether from income or wealth, is not by any means motivated by merit or need; rather, it is often based on narrow loyalties and favouritism. Such a value system does not encourage productive work, let alone knowledge production. Add to this the restrictions on freedoms and the penalties for expressing independent opinion discussed previously, and the formidable gauntlet that Arab knowledge production must run becomes quite apparent.

Arab countries, therefore, have little choice but to pursue deep reforms in their social and economic structures in order to lay better foundations for the knowledge society. The central goal will be to shift to a higher value added structure of production.

In economic terms, that shift would begin with:

• Moving quickly to the upstream or downstream ends of processing in the oil and natural gas industry, which require higher skills and generate more value-adding activities than present turnkey operations.

• Recognising that total reliance on non-renewable oil rents is a rapidly diminishing prospect, and thus investing state resources in diversifying economic structures and markets and developing renewable resources through knowledge and technological capabilities.

This shift will require a stronger Arab presence in the *new* economy where value added is higher and grows faster. As economic activities grow, they create new knowledge as a basis for economic value, thus establishing a dynamic virtuous cycle between knowledge and growth.

Such a transformation, in turn, calls for the intensification of R&D efforts and a sharp focus on technology. Higher education institutions can spearhead this technological shift, as was the case with universities in Brazil and Malaysia, for instance. The state, the business sector and higher education institutions should unite to build consultancy and technology-launching centres and to create an atmosphere conducive to knowledge production through innovation. This large task ought to become a major 'societal project' in every Arab country.

A successful transition to new patterns of knowledge production is contingent on establishing all pillars of the knowledge society set out in this chapter.

5. ESTABLISHING AN AUTHENTIC, BROADMINDED AND ENLIGHTENED ARAB GENERAL KNOWLEDGE MODEL

Effective contribution to human knowledge is not foreign to Arabs or to Arab civilisation, as several aspects of this Report have, hopefully, demonstrated. Nevertheless, regaining this eroded capacity will mean consciously overcoming legacies from the era of decline that still cling on stubbornly today. The establishment of an authentic, broadminded, and enlightened Arab general knowledge model requires essential reforms in the societal context in Arab countries. These reforms are summed up in the following five actions:

Delivering pure religion from political exploitation and honouring ijtihad (scholarship)

Pure religion is innocent of any negative disposition towards knowledge acquisition. The Arab scientific renaissance in the past is clear testimony to that; in fact, at that time a strong synergy developed between religion (Islam) and science as pointed out in Chapter 1.

Nonetheless, what applies to pure religion does not necessarily apply to religious institutions and religious interpretations. There has been enlightened and regressive religious in-

terpretation, the latter increasing after the doors closed on true scholarship.

Over the 20th century, religion, as an Arab institution, lost its institutional distinction and relative independence. This happened with the rise of modern, centralised states that grew and expanded at the expense of relatively independent civil society institutions – a process that ran from the mid-19th century until the mid-20th century. These states then took large leaps towards domination during the second half of the 20th century.

With these last leaps, the modern central state became, and remains, virtually the only societal organisation, pushing non-governmental institutions into the margins of society. The state's approach to these institutions has varied: some were simply abolished, as in the case of the endowments, others were subjected to control and close monitoring, as in the case of NGOs. A third group was annexed, as in the case of universities.

Thus, religious institutions became either state-affiliated, as mosques managed by the state over the past 20 years in particular, or annexed to the state, as was the case with Al-Azhar, religious institutes and Sufi groups. The state and its other agencies evolved as the source "guiding" the outlook of religious institutions on social and political reality. In effect, that outlook then defined the standpoint from which religious jurisprudence proceeded and according to which religious interpretations are issued.

This resulted in the ousting of religious thought incompatible with, or actively opposed to state influence over pulpits. Yet it is precisely such ousted religious thinking that has had the greatest appeal to people, that has come closest to their hearts and influenced their religious consciousness on the spiritual, intellectual and sometimes the political levels.

Emphatically, the restoration of the independence of religious institutions would reinstate their genuine role and strongly empower religion as the protector of the people's interests.

As stressed in the Report, pure religion (Islam) provides great incentives for knowledge acquisition. It is the political, and even commercial, exploitation of religion that have contributed to weakening the quest for knowl-

BOX 9.4

Imams (religious leaders) advocate ijtihad (scholarship)

Abu Hanifa: "This is the best I have seen; nonetheless, he who provides better would be accepted by me."

Malik: "I am but a human being who both errs and says correct things, so look into my opinions."

Ibn Hazm: "It is not permissible for anyone to imitate a live or a dead person; everyone has the right to practise scholarship as much as he can."

Jalal Ed-Din As-Syouti: "A Response to Those Who Became Idle and Did Not Realise that Scholarship is, in Every Age, a Duty." (Title of work)

BOX 9.5

Al Kawakibi, (1884-1902), on the need for religious reform

All Orientals, be they Buddhists, Muslims, Christians, Jews or otherwise, urgently need sages who are not swayed by the foolishness of the stupid and the careless, nor by cruel, ignorant rulers. We need sages who revive the investigative study of religion, thus restoring the lost aspects thereof, and refining it from any false impurities – which normally attach to any old religion. Thus, each religion needs innovators who restore it to its pure, uncon- taminated origins that can reinstate human will and human happiness; those origins that mitigate the misery of despotism and slavery; those origins that provide insight into correct methods of education and learning, and that prepare its followers for the basics of good upbringing and stable morality – all of which makes people human, and with which people become brothers and sisters.

Source: The Character of Despotism, pp 97-98.

edge in Arab countries.

This conclusion is not directed solely, as some may imagine, at certain fanatical political Islamic movements. It applies as well to some Arab governments, societal forces and even certain traditional religious institutions, which have used religious exegesis to secure their dominion or reproduce their hold on the Arab people. The essential point is that the exploitation of religion, for objectives far removed from its sublime purpose and soul, can no longer be tolerated if Arab society is to free itself to build a living knowledge society.

In Arab countries where the political exploitation of religion has intensified, tough punishment for original thinking, especially when it opposes the prevailing powers, intimidates and crushes scholars. Penalties can amount to accusations of heresy, a license to kill offenders or the separation of spouses. Small wonder, then, that scholarship shrinks in the repressive grip of religion perverted from its true course.

Another aspect of the dominant climate of belief that calls out for action is the culture of myths, widespread in Arab countries. It often leads to the publication of worthless books and tabloid journalism, cloaked in religion yet

The exploitation of religion, for objectives far removed from its sublime purpose and soul, can no longer be tolerated.

In Arab countries ... tough punishment for original thinking, especially when it opposes the prevailing powers, intimidates and crushes scholars.

far removed from it. Texts that prey on superstition close the minds and spirits of men and women who have been denied education – and even of some educated classes – to genuine understanding and knowledge.

Advancing the Arabic language

Language is the reservoir of knowledge in general, and a people's mother tongue is the main medium for their creativity and knowledge production. Historically, the Arabic language has proved itself capable of expressing and addressing the deepest, finest, most complex and most nuanced aspects of knowledge. As this Report has emphasised, the major movement of translation into Arabic was closely linked to, and motivated by, an eminent scientific school fully capable of producing knowledge.

Such a language has the structures, flexibility and potential to propel Arabs into the age of information and knowledge-intensity and to sustain their position there. Yet grave dangers beset the Arabic language today and threaten to extinguish the great opportunity it represents for Arabs to build their own knowledge societies.

Advancing the Arabic language entails moving on several fronts. The present discourse on the Arabic language has become sterile. It should be succeeded by a more comprehensive, profound and discriminating perception of the Arabic language system, whether concerning its interdependent internal elements, or their strong relationship with other systems in society. Moving towards the knowledge society is an opportunity to speed up linguistic reform, taking advantage of new developments in linguistic science.

The *Arabisation of university education* is a further priority, not for reasons of nationalism per se, but as a prerequisite for developing native tools of thought, analysis and creativity. Arabisation of higher studies will also accelerate the social assimilation of rapidly changing and advancing knowledge, a marked feature of the knowledge society. Moreover, so long as the sciences are not taught in Arabic, it will be difficult to build bridges between the various disciplines. But it is absolutely critical that efforts to Arabise knowledge proceed in tandem with the improvement of foreign language teaching in all fields of knowledge. Both avenues of knowledge acquisition must be kept open.

Promoting Arabisation also requires a new outlook on the mechanisms of word-construction; encouraging writing in Arabic in various scientific fields; supporting machine translation and using information technologies to build terminology banks and to analyse the conceptual structure of Arabic words so that foreign terms pass into Arabic with maximum fidelity to the concepts they contain.

Perhaps the best way to advance the Arabic language in general is through working to construct a simplified Arabic standard. Some specific suggestions follow:

- One proposal in this regard is to initiate a creative composition movement for young children: a movement conducted by renowned, capable writers able to tame, simplify and modernise the language without sacrificing its inherent values. Success would give new generations of Arab writers and readers a vibrant medium for producing Arab works with new vistas and inspiration.

- Related to this, the inauguration of serious research in Arabic language studies, preferably on the pan-Arab level, is a key priority. Arabic linguists should participate with specialists in other disciplines to:
  - Compile specialised, functional dictionaries and thesauruses. These could be espe-

The best way to advance the Arabic language in general is through working to construct a simplified Arabic standard.

BOX 9.6

Teaching medicine in Arabic is possible!

Medicine is, perhaps, as many see it, the most difficult discipline to teach in Arabic. Yet in 1919 the Arab Medical Institute was reopened in Damascus after a committee passed a draft law comprising 12 Articles, one of which provided that teaching be conducted in Arabic.

The Faculty of Medicine then produced a thesaurus of medical terms in Arabic, consisting of 14,534 terms. This dictionary was critically reviewed by the President of the Arabic Academy, and professor of endocrinology at the Faculty of Medicine at the time. Recommended amendments and additions were then compiled in a large volume containing 1,102 pages and published in 1983. Eventually, the Unified (Arabic) Medical Dictionary was compiled in co-operation with the WHO regional office.

During the period 1970-1991 the Faculty of Medicine, Damascus University, graduated 1,442 specialists, all of whom had studied medicine, and pursued graduate studies, in Arabic.

More than one Arab conference has been held to consider teaching medicine in Arabic:

- The Regional Convention for the Arabisation of Medical Teaching in Arab Countries (Cairo, 17-20 June 1990). Out of this convention emerged The Standing Committee for the Follow-up on Arabisation in medicine.
- The Conference on the Arabisation of Medicine and Medical Sciences in the Arab World (Bahrain, February 1993).

The proceedings of these conferences were strongly in favour of teaching medicine in Arabic, without neglecting foreign languages, and recommended Arab co-operation in this regard.

Source: The Conference on the Arabisation of Medicine and Medical Sciences in the Arab World (Bahrain, February 1993).

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cially useful in the production of materials for children and educational curricula, in addition to specialised scientific materials.

• Cast scientific terminology in Arabic and coin derived terms free from obscurities.

• Conduct research to facilitate Arabic grammatical rules and simplify their terminology.

• Write general books on Arabic grammar transcending national curricula to present models that show how to teach correct language without excessive reliance on rules.

• Facilitate the acquisition of correct Arabic via various formal and non-formal learning channels.

• Encourage the computerisation of the Arabic language.

• Enrich the Arabic content of information networks and websites.

Renovating the Arab general knowledge model: the past as inspiration for the future

Among the ironies of the present Arab reality and the reasons for its knowledge deficits today is the fact that the creativity and thirst for knowledge that produced ancient renaissances has not been allowed to live on in present-day society. Current tendencies do not spur Arabs to assume their place in the global knowledge society or reclaim their best historical influences. On the contrary, those influences only surface briefly in ceremonies and celebrations, reflecting empty pageantry, and are either quickly forgotten or relegated to museums and the pantheon of memory.

A resolute and concerted effort is required to revive, in a forward-looking manner, sources of illumination in the Arab knowledge heritage, and to encourage those sources to irradiate the Arab general knowledge model, particularly through the mass media and institutions of modern education. This effort has nothing to do with nostalgia. Rather, it is about stimulating the genuine comprehension and re-assimilation of those cultural values, mindsets and intellectual currents that can nurture a modern Arab knowledge renaissance.

Enriching, supporting and celebrating cultural diversity in the region

From the perspective of the International Bill of Human Rights (IBHR), a respected perspective in itself, minorities enjoy inalienable rights that protect their cultural and religious specificity. In addition, the IBHR had become inseparable from the legal structure of the many Arab states that have ratified the international conventions and charters concerned, which makes its provisions binding.

However, above and beyond safeguarding rights – a supreme human end – cultural diversity offers any society incomparable advantages when it comes to building knowledge. "A single flower does not a garden make, nor does a single bird bring spring." Beauty and bounty are the result of diversity. Cross-fertilisation gives birth to strong offspring, whether in nature or in knowledge.

Each Arab country represents an extraordinary cultural and knowledge mix that, through cross-fertilisation among ethnic, religious and social groups, could contribute to the enrichment of Arab societies across the region. An Arab Free Citizenship Area encouraging the interaction of all symbolic structures, ideas and their human carriers in the Arab world would realise dividends even larger than those ensuing from the integration of commodities and capital. Entrance to the world knowledge society from this strengthened base would substantially enhance both what Arabs can contribute to, and what they can acquire from the new age.

A resolute and concerted effort is required to revive, in a forward-looking manner, sources of illumination in the Arab knowledge heritage.

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[5]Respected Christian luminary of Cordoba in the mid-9th century. Quote is from his famous polemical work, The Unmistakable Sign (Menocal. 2002, 66-67).

Opening up to other cultures

No civilisation in history has ever flourished without interacting creatively with other centres of human advancement, past or contemporary.

The Arab-Islamic culture at its zenith was a role model for borrowing and assimilation, followed by generous giving when it established its distinguished knowledge edifice. What is known nowadays as "Western" knowledge is itself an accumulation of human contributions throughout history, to which the Arab world contributed when the Arab-Islamic civilisation flourished, and afterwards through the Library of Alexandria. As world citizens, as contributors to the global stock of knowledge and as seekers of new knowledge, the Arab peoples can, and should, embrace all opportunities to understand and relate to other cultures in the West and in the developing world.

Translation into Arabic and other languages

Translation is a wide bridge for transferring and localising knowledge. As argued elsewhere, the Arabisation of learning and a return to a vigorous movement centred on translating works from other languages hold the keys to rapid knowledge acquisition and assimilation. This movement is also linked to indigenising science and technology and rebuilding Arab R&D. The Arab world needs to regain its historical prowess in translation as part of opening itself to new cultures and as a prerequisite for building the knowledge society.

Translation from Arabic is a different issue; it is currently limited to a few literary works and essentially depends on personal connections and chance. Important transla-tions from Arabic await a critical mass of quality knowledge production by Arabs, as was the case historically in Andalusia.

In advancing cultural interaction, Arabs living abroad and the citizens of other countries of Arab origin – many of whom are highly qualified – can be indispensable connectors between the Arab world and other societies. Expatriate Arabs often benefit from relatively free societies and enjoy better access to knowledge and ideas than their counterparts in the region. They can be among the outriders of a networked Arab knowledge renaissance. But Arab countries must undertake to support the Arab Diaspora consciously through explicit channels. This can take various forms: establishing up-to-date, computerised rosters of expatriate Arabs; creating attractive, regular means of communication through the use of ICT; and providing facilities for Arab expatriates to visit and work in *all* Arab countries, as well as supporting Arab culture in countries that host Arab emigrants.

Arab countries can also establish know-how transfer programmes that allow expatriate Arabs to undertake short, intensive consultancies and business advisory services. Models for such programmes exist in the work of UNDP and other international organisations. Arab countries can also sponsor ICT virtual networks among expatriate Arabs and those desiring to benefit from their knowledge and expertise in Arab countries. The fostering of organisations specifically designed to bring expatriate Arabs together will institutionalise two-way ties between emigrants and their countries of origin.

An intelligent way to benefit from non - Arab civikisations

This Report has adopted a wide definition of knowledge as the arterial system that connects all human actions and symbolic structures in human cultures. It has therefore not limited knowledge to scientific production alone but taken a broader view encompassing all the sciences, arts, literature and even values, habits and customs in both formal and folk culture.

Civilisational cross-fertilisation is a sure way to enrich knowledge on both sides of the exchange. Yet Arabs today seem content to accept a passive, one-way relationship with

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BOX 9.8

Ibn Rushd (Averroes), (1126-1198 AD): The Need to Learn from the Efforts of Previous Nations

If we find that the nations which preceded us had a vision and consideration for existing things, depending on the requirements of proof, we must look into what they said on that and what they wrote in their books. Anything of what they said, which complied with the truth, we would take, feel happy with and thank them for. What did not comply with the truth, we should point to, warn against and give previous nations an excuse for (learned people are legally excused if they make mistakes)… Thus, we find that we are legally bound to look into the books of previous nations.

Source: (Ibn Rushd, 1999, P.93.).

just one external point of reference and to remain on the receiving end of cultural flows from the West. This is the very antithesis of healthy cross-fertilisation because it leads to the adoption of a poor copy of the other culture.

Relations between Arabs and the West, especially after September 11, have come under intense strain. As noted in this Report, Arabs, Muslims and Islam have since been subjected to defamation and misrepresentation, a reflection in many instances of ignorance and in some cases an expression of unjustified abuse.

While this appears to be growing into more than a difference of opinion, Arabs should not close up to the outside world. From the standpoint of cross-fertilisation and knowledge, American society represents a more enduring source of ideas, cultural resources and values than any single political administration, which is bound to change through democratic processes. Differences at the political level, no matter how intense, should not be allowed to eclipse this all-important fact and to shut the door on cultural dialogue.

The West includes, but is more than the US. Europe represents a pole of values, knowledge and culture that has geographic (the Mediterranean) and historical and cultural ties (especially through Spain) with the Arabs, which need to be invested in for the good of both parties. Cultural, and especially scientific and technological transfers and exchanges, as part of these relations, will further the establishment of the knowledge society in Arab countries.

Arabs need to open up to all cultures, not solely the West. The experiences of the Asian circle and other non-Arab neighbours offer important opportunities for interaction based on a deep common understanding and mutual respect.

Taking full advantage of what regional and international organisations offer and participating in global governance

Regional and international organisations can play an important role in cultural cross-fertilisation between Arabs and other civilisations. Yet Arab countries, as a group and individually, do not benefit from such organisations effectively, or make optimal use of their services or play a significant role in their governance. Moreover, the structure of such organisations, where performance has deteriorated in a unipolar world, has reduced the benefits to developing countries of the noble goals of these institutions. To the extent that developing countries, including Arab countries, let disunity and division undermine their representation in international organisations, including the UN, their structures and services will continue to be dominated by other blocs and power interests. Arab countries need to energise their financial, political and technical contributions to regional and international activities, and thus develop a stronger international image while reaping the benefits of closer co-operation and unity through such bodies. This is especially important with respect to those organisations that can contribute to building the knowledge society in the Arab world.

The international architecture of global governance is often weighted preponderantly in favour of the interests of the rich and powerful nations. Without changes that tip the balance of these structures more towards the needs and aspirations of developing countries, including Arab countries, globalisation cannot become a locomotive of human development or a force for the spread of knowledge in the world.

So long as Arabs remain divided among themselves and in disarray, they will not be able to contribute effectively to the rebalanc-

BOX 9.9
Al-Kindi, (175-260 AH): Appreciating the truth regardless of the source

"We must not shy away from appreciating the truth and adopting it regardless of its source, even if it came from people who are far away from us and different from us. There is no greater reason to seek the truth than truth itself. One should not belittle the truth or belittle the person who said it or conveyed it."

Source: Ibn Rushd (Averroes), "The Final Say on the Determination of the Relationship between Islamic Law and Wisdom" (quoted in Abed Al-Jaberi, 1999).

BOX 9.10
Ibn Miskawieh, (325-421 AH): On lauding cultural cross-fertilisation

"I have selected this title for the book, *Gawidan Khurd* (Eternal Wisdom, in Persian), to tell the reader that the minds of all nations are essentially but one. They do not differ from one another from country to country; they do not change with time, and they do not grow old and fragile."

Source: Ibn Miskawieh, *Gawidan Khurd* (Eternal Wisdom), p.147 b, in Frantz Rosenthal's: *Methods of Muslim Scientists in Scientific Research*, in Arabic, Dar Ath-Thaqafa, Beirut, 1980.

Arabs need to open up to all cultures, not solely the West.

Arab countries need to energise their financial, political and technical contributions to regional and international activities.

ing of systems of global governance and thus nudge these systems into playing their role in facilitating the creation of knowledge societies. Indeed, the present situation can only leave Arabs on the receiving end of an international order that is frequently inequitable and unresponsive to their own objectives in freedom and knowledge.

Building a knowledge society across the Arab world is the only way to lead the region into a renaissance that can change its present course and help all Arab countries to position themselves on a new and much more hopeful curve of development in the region and contribute to a new world for humanity at large. This will require the reengineering of Arab cooperation, and wide restructuring in Arab countries, basing both on full public participation, a key element that has been missing so far. Lack of voice and representation in regional initiatives has greatly reduced the effectiveness and sustainability of joint Arab action.

Bold restructuring by Arab leaders and institutions needs to be supported by sustained, well-designed and efficiently implemented programmes of action for establishing the knowledge society, following the guidelines suggested in this chapter. Committed Arab cooperation can create a Free Arab Citizenship Zone open to all people of the region and a real opportunity for Arabs to participate in globalisation from a position of dignity and strength.

Knowledge lights the lamps that point out the way on the Arab journey to the future. Nothing in religion, culture and history blocks those beacons. On the contrary, Arab heritage declares that knowledge must shine through all the endeavours of humankind. What has blotted out that light is the work of mortals: the defective structures – political, social and economic - that have hidden knowledge from the Arab people and eclipsed its full possibilities. Yet what human beings have wrought human beings can remove, and must, so that the flame of Arab learning can once again burn bright and long in this new Millennium of Knowledge.

Knowledge lights the lamps that point out the way on the Arab journey to the future.