

Being at the Leading Edge – How to Give Quest for Excellence a New Meaning

January 31st-February 3rd 2011, Atlantis, The Palm Dubai, UAE

Policy and Strategy Roundtable

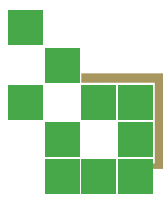
Healthcare and Environmental Issues in the Arab World:
Crafting Policy Options

Atlantis Hotel, Palm Dubai, January 31st - February 3rd, 2011



Report

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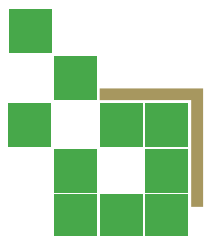
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Dr Mansoor Al Awar
Chancellor

Foreword

Hamdan Bin Mohammed e-University (HBMeU) has created an outstanding opportunity for distinguished scholars, practitioners, policy makers, media organizations, consultants, WHO officials, UN representatives, NGOs, and of course community leaders to come together at the annual Policy and Strategy Roundtable established for facilitating policy-oriented discussion and dialogue with a view to making policy recommendations.

This Roundtable provided a welcome opportunity to focus on pressing issues related to health and environment in the Arab World. Tackling the health implications of deteriorating environment depends, to a great extent, on the knowledge available for effective policy making. The Roundtable generated useful information and ideas for the benefit of policy makers.

The presence of eminent scholars such as Dr. Farouk El Baz and others from WHO and UN organizations at the Roundtable testifies to the quality of deliberations. Indeed, the scientific outcome of the deliberations at the Roundtable presented in this report would be extremely valuable for all stakeholders in designing sustainable policies relating to environment and health in the Arab World.

Surely, our generation cannot afford to miss the opportunity to rise to the challenge of protecting the environment for the benefit of future generations. Being futuristic, HBMeU has created the Roundtable mechanisms to generate robust discussions and consensus, if possible, on issues that are bound to influence the future of health and environment in the Arab World. I hope, the information and proposals presented in this report would be of interest to policy makers and all others having stake in making our planet safe and healthy for generations to come.

Executive Summary



This report is based on deliberations at the Policy and Strategy Roundtable titled, 'Healthcare and Environmental Issues in the Arab World: Crafting Policy Options' organized by HBMeU on 31 January, 2011 at the Atlantis Hotel, Dubai. The Roundtable is a mechanism that brings together UN agencies, academics, government policy makers, media organizations, NGOs, distinguished practitioners and other interest groups to deliberate on a pressing mix of issues in the areas of healthcare and environment.

Several countries in the Arab World are experiencing fast-paced industrialization and confronted with issues such as water and air pollution, environmental deterioration, hazardous waste and scarcity of information. In order to define a long-term socio-economic development paradigm these issues must be carefully addressed. Indeed, accessibility to resources and healthy environment are the basic needs for sustainable development of the economies of the Arab World.

This Roundtable, attended by eminent participants addressed key environmental and health issues and offered valuable policy leads for solving them. There is a scientific rationale for grouping together so many healthcare and environmental issues facing the Arab World. It would be possible to make progress relating to these issues through national, regional and global policy interventions in a holistic manner for carving socio-economic welfare.

The Roundtable panel acknowledged that all Arab League countries do not face the same health and environmental problems. However, diversity brings in its wake a promising

opportunity to learn from each other's experience and bridge policy gaps, it was observed. The Roundtable outcome could be a unifier of policies across nations in the Arab World.

The Roundtable produced interesting recommendations. These included bringing in the Arab League at the Roundtable, identifying champions who could promote the cause of protecting health and environment throughout the Arab League nations, and designing specific strategies that could produce quantifiable results over time. Surely, the quality of any strategy depends on the quality of information supporting it. The Roundtable panel suggested that the pace of research focusing on health and environmental issues must be accelerated in the Arab World, possibly in collaboration with WHO.

A committee was formed to monitor progress in tackling health and environmental issues in the Arab World. The committee was urged to delineate the modalities of moving forward together to address the issues of common concern. It was observed that 'getting the facts across' would be critical in ensuring the Roundtable's engagement with policy makers in the Arab World

In the final analysis, the Roundtable noted that clarity of environmental issues in interaction with public health policy and awareness campaigns addressed to policy makers can of course help Arab states achieve success.



Dr Narimane Hadj-Hamou

Assistant Chancellor for Learning and Academic Development

Introduction

This report is prepared to present information, analysis and promising leads for policy makers. It is based on an illuminating policy-oriented discussion at the Policy and Strategy Roundtable focusing on healthcare and environmental issues facing the Arab World. It reflects a core component of the strategy of Hamdan Bin Mohammed e-University (HBMeU) to lead in influencing policy agenda in the Arab World by creating and disseminating useful knowledge.

The environmental issues in the Arab World attracted attention of policymakers, media organizations and academics in the early 1980s in view of global concern relating to the environmental threats for people and economies of the world. It was popularly perceived by policymakers in the Arab World that only a technical response would be required to address the environmental issues. However, the enhanced focus on the environmental issues and their potential implications for healthcare management in the 1990s marked a shift from the traditionally myopic thinking towards a broader focus on interactions between environmental conditions and healthcare management.

The World Health Organization (WHO) has suggested a holistic approach connecting healthcare issues with broader environmental issues and various sectors of the economy. For instance, by addressing issues such as water and air pollution, energy, transportation, agriculture, industrialization and ecosystems, nations can design mutually reinforcing policies, regulatory frameworks, disease control programs and investment initiatives for attaining sustainable development.

The Regional Dimension

The Arab World includes 22 countries of the League of Arab States stretching from Morocco and Mauritania in the west, through North Africa and the Levant, to the Arabian Gulf in the east. It can also be divided into three geographic sub-regions: the Mashreq region including Egypt, Iraq, Jordan, Lebanon, Palestine and Syria, the Maghreb countries including Algeria, Libya, Morocco and Tunisia and the Gulf region including the six member states of the Gulf Cooperation Council including Bahrain, Kuwait, Oman, Qatar, United Arab Emirates, and Saudi Arabia as they have established a customs union. Yemen may be considered part of the Arabian Gulf region. Another grouping of Arab countries includes Comoros Islands, Djibouti, Mauritania, Somalia and Sudan categorised by the World Bank and IMF as less-developed countries.

Table 1 presents demographic indicators relating to the Arab countries. The Arab World has witnessed remarkable changes in recent decades. Its population has increased from nearly 50 million in the last century to over 325 million in 2008. The total population of the GCC countries is nearly 33 million.

Health systems in the region account for nearly 5 percent of GDP, 3–10.7 percent of the public budget (Table 2), and 2–5 percent of all employment. The healthcare sector in the Middle East is estimated at approximately US\$74 billion and growing at 16% per annum. The health status of the Arab states is characterised, inter alia, by declining child mortality rates in several countries, disparities between and within countries, inadequate data on health, rising costs of healthcare, narrow biomedical model meant to treat common diseases, lack of inter-sectoral coordination, over-stretched primary healthcare services, inadequate government expenditure on healthcare in low-income countries, lack of health insurance programs, inadequate infrastructure for research on healthcare, and gaps in healthcare delivery systems.

The GCC countries are currently experiencing health problems such as diabetes and heart-related problems. Chronic

diseases such as diabetes, cholesterol and hypertension are more pervasive in the GCC countries than in OECD countries. Nearly 25% of GCC citizens suffer from high levels of cholesterol versus 18% in the US and approximately 25% of the citizens in the GCC suffer from hypertension compared to 21% in the US. (Malkawai,2009).Such a state of health conditions requires continuous monitoring and medical treatments leading to higher healthcare expenditures.

Environmental Issues

The Arab World's healthcare system is inextricably tied to its environmental conditions, which in turn bind the Arab countries together as well as giving them a stake in global environmental discussions and initiatives. Although environmental issues have come to be recognized, debated and discussed at various fora in the Arab World, the seriousness, intensity and depth of these issues have not been fully explored at par with other major macro-economic issues. Specifically, the issue of environmental sustainability has not been fully explored and discussed in its interaction with overall development and macroeconomic policies in the Arab World. Nevertheless, the following pressing issues relating to the environment have surfaced in various discussions and the literature.

Climate Change

"There is now widespread agreement that the earth is warming, due to emissions of greenhouse gases caused by human activity. It is also clear that current trends in energy use, development and population growth will lead to continuing – and more severe – climate change. The changing climate will inevitably affect the basic requirements for maintaining health: clean air and water, sufficient food and adequate shelter.

Each year, about 1.2 million people die from causes attributable to urban air pollution, 2.2 million from diarrhea largely resulting from lack of access to clean water supply and sanitation, and from poor hygiene, 3.5 million from malnutrition and approximately 60 000 in natural disasters. A warmer and more variable climate threatens to lead to higher levels of some air pollutants, increase transmission of diseases through unclean water and through contaminated food, to compromise agricultural production in some of the least developed countries, and to increase the hazards of extreme weather.

Climate change also brings new challenges to the control of infectious diseases. Many of the major killers are highly climate sensitive as regards temperature and rainfall,

including cholera and the diarrheal diseases, as well as diseases including malaria, dengue and other infections carried by vectors. In sum, climate change threatens to slow, halt or reverse the progress that the global public health community is now making against many of these diseases."(WHO, 2009)

According to United Nations Framework Convention on Climate Change (UNFCCC), the natural and physical systems in the Arab World are currently experiencing great pressures. These will be intensified as temperatures in the region increase and/or precipitation drops. The region will face an increase of 2 to 5.5°C in the surface temperature by the end of the 21st century. Any rise in sea level due to rising temperatures could lead to a significant loss of agricultural land in the Arab World. For instance, even a slight rise in seal level could cause the loss of 12% to 15% of agricultural land in the Nile Delta region, and could shrink Qatar's land area by 2.6% (UNFCCC). Moreover, industrial and tourism sectors, urban areas and the GDP in a number of Arab countries would face serious threats from rising sea level due to climate change.

Water and Marine Resources

"Safe water supplies, hygienic sanitation and good water management are fundamental to global health. Almost one-tenth of the global disease burden could be prevented by:

- ▶ Increasing access to safe drinking water;
- ▶ Improving sanitation and hygiene; and
- ▶ Improving water management to reduce risks of water-borne infectious diseases, and accidental drowning during recreation.

Annually, safer water could prevent:

- ▶ 1.4 million child deaths from diarrhea;
- ▶ 500 000 deaths from malaria;
- ▶ 860 000 child deaths from malnutrition; and
- ▶ 280 000 deaths from drowning.

In addition, 5 million people can be protected from being seriously incapacitated from lymphatic filariasis and another 5 million from trachoma.

Efforts to improve water, sanitation and hygiene interact with each other to boost overall health. Access to sanitation, such as simple latrines in communities, prevents drinking water contamination from human waste and reduces infections.

High-tech public health measures are not necessarily the best: frequent hand-washing with soap and safe storage of drinking water are high-impact practices.

Environmental management effectively lowers the rates of malaria and other diseases spread by insects and prevents death. These measures include eliminating habitats - such as standing water - for breeding, and screening doors and windows for protection from mosquitoes.

Investment to improve drinking water, sanitation, hygiene and water resource management systems makes strong economic sense: every dollar invested leads to up to eight dollars in benefits. US\$ 84 billion a year could be regained from the yearly investment of US\$ 11.3 billion needed to meet the water and sanitation targets under the Millennium Development Goals.

In addition to the value of saved human lives, other benefits include higher economic productivity, more education, and health-care savings". (Source <http://www.who.int/features/qa/70/en/index.html>)

Water problem is real in the Arab World. The average annual available water per capita in the Arab countries was 977 cubic metres in 2001, much below the UN benchmark for water scarcity. Unfortunately, the forecasts are pessimistic: by the year 2023, the number is expected to decrease to 460 cubic metres. Recent WHO studies show that about 100,000 Arabs are losing their lives annually because of health problems related to water, sanitation and hygiene issues. With the possible exception of Egypt, Sudan, Iraq, Lebanon, and Syria, all Arab countries may experience severe water crisis by the year 2025 (WHO,2009). Currently, most Arab countries have levels of renewable water resources far below the levels of other major regions in the world.

Water supplies in the Arab World, exceeding 80%, are used for irrigation. Moreover, water use efficiency levels are relatively low in the region, ranging between 37% and 53% (WHO,2009). Although population's access to improved water and sanitation in the Arab World does not appear to be alarming (Table 3), the rapid pace of development in some countries poses a challenge. For instance, booming construction sectors, proliferation of golf courses in some countries (such as Egypt and UAE where water resources are already dwindling), and growing industrialization pose a serious challenge to policymakers. The Arab countries have over 30,000 kilometres of coastal line linked to the Indian Ocean, the Mediterranean and the Red Sea. 18,000 kilometres of the Arab World's coastal line include populated areas. According to UNEP Regional Seas Programme, the Arab World is facing the following key problems.

- ▶ The municipal sewage from industries such as petroleum refineries, power, desalination and petrochemical plants are contributing significantly to marine pollution.
- ▶ Dredging and reclamation projects in coastal areas have negative effects on the marine environment.
- ▶ Operational and accidental oil pollution is another major challenge in the region. The Regional Organization for the Protection of the Marine Environment(ROPME) sea area has conspicuously emerged as a high risk pollution area, mainly due to the existence of large number of offshore oil and gas installations, tanker loading terminals, and the high volume of oil tanker movements. It is estimated that nearly 2 million barrels of oil are spilled annually from routine transportation of crude oil.
- ▶ The impact of the marine environment characterised by offshore oil installations on water pollution is huge.
- ▶ The pollution caused by ships and dumping of ballast water are also having negative effects on the quality of water resources. (<http://www.unep.org>)

Aridity, Drought and Desertification

The issue of aridity has a direct correlation with the scarcity of water resources. In fact, all agriculturally productive lands in the Arab countries are fragile systems prone to degradation and highly vulnerable to desertification. In view of the seriousness of the problem of aridity, Sudan formulated a plan of action to combat desertification in 1976. Tunisia and Egypt promptly followed suit. However, the response of other Arab countries has so far been modest at best, as low priority has been given to the formulation and implementation of programmes for combating desertification. Admittedly, institutions such as ACSAD in Syria and ICARDA in Aleppo do exist as well as university research departments and national research centres on desertification. Some initiatives in Saudi Arabia, Qatar, UAE and Egypt have been taken to establish funds for supporting research relating to sustainable management of land and water resources.

Air Pollution

Recent WHO studies show that about 90,000 Arabs are losing their lives annually because of health problems associated with indoor and outdoor air pollution (WHO, 2009). Air quality in Arab countries continues to deteriorate. Consequently, the costs of health and environmental control are sharply rising. Health problems attributed to air pollution from the transport

sector alone cost Arab countries over US\$5 billion per annum. Per capita carbon dioxide emissions have risen sharply in most countries of the Arab World in the last three decades. The GCC countries emit about 50% of the total of carbon dioxides emitted by all Arab countries (WHO, *ibid*) A major problem in the Arab World is that only a few countries monitor air pollution levels systematically, consistently and scientifically which makes policy-making difficult.

Table 1. Demographic Indicators of the Arab World

Country	Area	Population 2009		Population dynamics					Age distribution and dependency ratio			Total fertility rate (R)(per woman)		
				Crude Birth Rate	Crude Death Rate	Natural Increase	Growth Rate	Age distribution		Dependency ratio				
		Total	Urban					<15 years	65+ years		Y	R	Y	
		Km2	000	%				Y	%	%				
Afghanistan	652 225	25 900	23	...	...	...	2.0	2009	46.0	4.0	100.0	2008	6.3	2008
Bahrain	758	1 107a	100a	15.3	2.2	2008	6.1	2008	20.2	2.4	29.2	2008	1.9	2008
Djibouti	23 000	818	84	42.0	15.0	2006	3.0	2006	40.0	2.0	72.4	2006	...	...
Egypt	1 009 500	76 823	43	28.9	6.2	2009	2.1	2008	31.7	3.7	54.8	2008	3.0	2008
Iran, Islamic Republic of	1 648 195	73 650a	71	18.3	6.0	2006	1.6	2006	25.1	5.2	43.5	2006	1.8	2009
Iraq	435 052	32 326	67	37.5	4.0	2009	3.4	2009	42.9	2.8	84.2	2009	5.0	2008
Jordan	88 778	5 980	83	30.6	7.0	2009	2.2	2009	37.3	3.2	68.2	2009	3.8	2009
Kuwait	17 818	3 640a	100	15.0	1.6	2008	9.3	2008	19.6	1.6	26.9	2008	1.7	2008
Lebanon	10 452	4 060	85 c	21.7	5.1	2009	1.7	2009	27.2	7.7	53.6	2009	1.9	2009
Libyan Arab Jamahiriya	1 665 000	5 603	86 b	24.9	4.0	2008	2.8	2008	31.1	5.0	56.5	2007	2.7	2007
Morocco	710 850	31 514	57	19.2	5.7	2009	1.4	2009	28.0	5.8	51.1	2009	2.2	2009
Oman	309 500	2 743b	...	27.3	3.3	2008	2.4	2008	35.2	2.2	59.7	2008	3.3	2008
Pakistan	796 096	163 760	35	25.0	7.7	2009	1.7	2009	43.4	3.5	88.3	2009	4.1	2007
Palestine	6 020	3 935	57	29.6	3.0	2009	2.7	2009	41.5	3.0	80.2	2007	4.6	2009
Qatar	11 580	1 639	100	11.2	1.2	2009	5.2	2005	13.7	10.0	31.0	2009	2.3	2008
Saudi Arabia	2 000 000	25 374	85	23.7	3.9	2009	2.2	2009	32.0	2.8	53.3	2009	3.0	2008
Somalia	637 700	8 440	36 b	44.0	16.0	2008	2.4	2008	44.4c	2.6	88.7	2007	6.7	2006
Sudan	2 506 000	39 154a	38 b	37.8	11.5	2007	2.5	2007	41.3	4.1	82.9	2007	5.1	2006
Syrian Arab Republic	185 180	20 125	54	34.8	3.9	2008	2.5	2009	37.9	3.6	70.9	2009	3.1	2005
Tunisia	154 630	10 434	66 a	17.7	5.8	2008	1.2	2008	24.2	7.0	45.3	2008	2.0	2008
United Arab Emirates	83 600	4 765a	81 a	40.4	1.6	2008	6.1	2008	19.1	0.9	25.0	2008	1.9	2008
Yemen	555 000	22 879a	30	39.7	9.0	2004	3.0	2009	45.0	3.5	94.3	2008	5.0	2006

Source: WHO (2009)

Table 2. Ministry of Health Budget as % of Government Budget

Country	Year	%
Afghanistan	2009	3.5
Bahrain	2009	9.3
Djibouti	2008	7.2
Egypt	2009	4.7
Iran	2009	4.7
Iraq	2009	6
Jordan	2009	8
Kuwait	2009	5.1
Lebanon	2009	2.7
Libya	2009	5.7
Oman	2009	4.6
Morocco	2009	5
Pakistan	2004	3.5
Palestine	2009	10.5
Qatar	2009	5.1
Saudi Arabia	2009	5.6
Somalia	NA	NA
Sudan	2009	3
Syria	2009	4.9
Tunisia	2009	6.8
UAE	2009	7.3
Yemen	2009	3.6
Algeria	2008	10.7
Mauritania	2008	5.3
Comors Island	2008	8.4

Source of data for the 22 EMR countries: <http://gis.emro.who.int/emrsis/ShowTabular.aspx>

Source of data for Algeria, Mauritania and Comoros is <http://apps.who.int/ghodata/>

Table 3. Population's Access to Improved Water and Sanitation in the Arab World

Location		Population using improved drinking-water sources (%)			Population using improved sanitation facilities (%)		
	Time Period	Urban	Rural	Total	Urban	Rural	Total
Afghanistan	2008	78	39	48	60	30	37
	2005	66	33	41	56	29	35
	2000	36	17	21	46	28	32
	1995	12	1	3	36	27	29
Algeria	2008	85	79	83	98	88	95
	2005	88	81	85	98	86	94
	2000	93	84	89	99	82	92
	1995	98	86	93	99	78	90
	1990	100	88	94	99	77	88
Bahrain	2008	100	NA	NA	100	NA	NA
	2005	100	NA	NA	100	NA	NA
	2000	100	NA	NA	100	NA	NA
	1995	100	NA	NA	100	NA	NA
	1990	100	NA	NA	100	NA	NA
Djibouti	2008	98	52	92	63	10	56
	2005	95	55	89	65	18	58
	2000	88	61	84	69	30	63
	1995	81	67	78	72	42	66
	1990	80	69	77	73	45	66
Egypt	2008	100	98	99	97	92	94
	2005	100	96	98	97	90	93
	2000	99	93	96	95	79	86
	1995	97	90	93	93	68	79
	1990	96	86	90	91	57	72
Iran (Islamic Republic of)	2008	98	NA	NA	NA	NA	NA
	2005	98	NA	NA	NA	NA	NA
	2000	98	83	93	86	78	83
	1995	98	83	92	86	78	83
	1990	98	83	91	86	78	83

Iraq	2008	91	55	79	76	66	73
	2005	93	53	80	76	61	71
	2000	95	49	80	76	54	69
	1995	97	44	80	76	46	67
	1990	97	44	81	NA	NA	NA
Jordan	2008	98	91	96	98	97	98
	2005	98	91	96	98	96	98
	2000	98	91	96	98	96	98
	1995	98	91	96	98	95	97
	1990	99	91	97	98	NA	NA
Kuwait	2008	99	99	99	100	100	100
	2005	99	99	99	100	100	100
	2000	99	99	99	100	100	100
	1995	99	99	99	100	100	100
	1990	99	99	99	100	100	100
Lebanon	2008	100	100	100	100	NA	NA
	2005	100	100	100	100	87	98
	2000	100	100	100	100	87	98
	1995	100	100	100	100	87	98
	1990	100	100	100	100	NA	NA
Libyan Arab Jamahiriya	2008	NA	NA	NA	97	96	97
	2005	NA	NA	NA	97	96	97
	2000	54	55	54	97	96	97
	1995	54	55	54	97	96	97
	1990	54	55	54	97	96	97
Mauritania	2008	52	47	49	50	9	26
	2005	49	43	45	45	9	24
	2000	45	37	40	38	9	21
	1995	41	32	36	31	9	18
	1990	36	26	30	29	8	16
Morocco	2008	98	60	81	83	52	69
	2005	97	60	80	83	50	68
	2000	96	58	78	82	43	64
	1995	95	56	76	82	35	59
	1990	94	55	74	81	27	53

Oman	2008	92	77	88	97	NA	NA
	2005	90	76	86	97	NA	NA
	2000	87	74	83	97	61	87
	1995	84	72	81	97	61	87
	1990	84	72	80	97	61	85
Pakistan	2008	95	87	90	72	29	45
	2005	95	86	89	72	25	41
	2000	95	85	88	72	20	37
	1995	95	83	87	73	14	33
	1990	96	81	86	73	8	28
Qatar	2008	100	100	100	100	100	100
	2005	100	100	100	100	100	100
	2000	100	100	100	100	100	100
	1995	100	100	100	100	100	100
	1990	100	100	100	100	100	100
Saudi Arabia	2008	97	NA	NA	100	NA	NA
	2005	97	NA	NA	100	NA	NA
	2000	97	NA	NA	100	NA	NA
	1995	97	63	90	100	NA	NA
	1990	97	63	89	100	NA	NA
Sudan	2008	64	52	57	55	18	34
	2005	68	53	59	56	19	34
	2000	73	55	61	58	20	34
	1995	79	56	63	60	21	33
	1990	85	58	65	63	23	34
Syrian Arab Republic	2008	94	84	89	96	95	96
	2005	95	82	89	96	90	93
	2000	95	79	87	95	82	89
	1995	96	76	86	95	73	84
	1990	96	75	85	94	72	83
Tunisia	2008	99	84	94	96	64	85
	2005	99	84	94	96	64	85
	2000	98	77	90	95	57	81
	1995	96	69	86	95	51	78
	1990	95	62	81	95	44	74

Turkey	2008	100	96	99	97	75	90
	2005	99	92	97	97	73	89
	2000	97	85	93	96	71	87
	1995	95	79	89	96	68	85
	1990	94	73	85	96	66	84
United Arab Emirates	2008	100	100	100	98	95	97
	100	100	100	98	95	97	NA
	100	100	100	98	95	97	NA
	100	100	100	98	95	97	NA
	100	100	100	98	95	97	NA
Yemen	2008	72	57	62	94	33	52
	75	58	63	89	29	46	NA
	82	59	65	81	21	37	NA
	88	60	67	73	14	28	NA
	NA	NA	NA	64	6	18	NA

Source: WHO(2009)

Waste Management

It is estimated that municipal waste generation rates in West Asian Arab states have jumped from 4.5 million tons per annum in 1970 to 25 million tons in 1995 (UNEP, 1997). Table 4 indicates solid wastes generation in some Arab countries. Table 5 shows solid wastes generation and composition in the Arab region in 1995. Nearly 80 percent of the total municipal solid wastes in the Arab world are decomposable and can be recycled (Al-Yousfi and Asfari, 2003). Curiously enough, nearly 50 percent of waste in many Arab countries may remain uncollected. Primitive methods of waste disposal are widespread in the Arab World and hazardous waste may get into municipal wastes during handling and disposal by people. In view of the buoyant construction activity in some countries of the Arab World, the disposal and management of wastes remains a challenge.

Table 4. Solid Wastes Generation in Some Arab Countries (1995)

Country municipal waste	Kg/Capita/day	Country municipal waste	Kg/Capita/day
Bahrain	1.6	Qatar	1.3
Egypt	1.2	Saudi Arabia	1.3
Jordan	0.9	Syria	0.5
Kuwait	1.8	Tunis	0.6
Oman	0.7	UAE	1.2
Morocco	0.33	Yemen	0.45

Source: UNEP(1997); Al-Yousfi (2003)

Table 5. Solid Wastes Generation and Composition in the Arab Region(1995)

Countries	Kg/capita	Organic Matter %	Paper %	Plastic %	Glass %	Metal %
Bahrain	584	59	12.8	7.4	3.4	2.1
Iraq	285	63	1	1	1.6	1.1
Jordan	330	63	11	16.8	2.1	2.1
Kuwait	660	51	19	13	4.5	5
Lebanon	220	59	18	8	8	2.4
Oman	256	60	8	12	10	9
Qatar	475	57	18	12	3	5
Syria	185	62	4	7	4	6
UAE(Dubai)	750	42	6	10	3	3
UAE(Abu Dhabi)	542	49	6	12	9	6
Yemen	165	55	14	13	1.5	2

Source: UNEP(1997);WHO(1995); Al-Yousfi (2003)

Biotechnology, Fertilizers and Pesticides

Pesticides and fertilisers are widely used in the Arab World. The use of NPK fertilisers in Arab countries jumped between 1970 and 2002. The UAE and Egypt used more than 900 kg fertilisers per hectare, Oman used 644 kg per hectare, and Lebanon used 414 kg per hectare. These were among the highest quantities of fertilisers used per hectare in the world. Admittedly, the incessant use of pesticides and fertilisers brings within its wake issues and concerns about food safety as a public health issue.

Urbanization

With growing urbanization and the advent of modern industrial organizations clustering around the nerve centres of socio-economic activity in the Arab World, the issues relating to environment have become rather complex. While

the urban Arab population is currently estimated to be 56%, this number is likely to rise to 66% by 2020. Urbanisation levels are particularly high in Kuwait (97%) and Bahrain (92%), thus putting great pressure on urban infrastructure and waste management mechanisms (WHO, 2009)

Environmental Research

Problem-solving environmental research is rather modest in the Arab World. While the number of researchers has been increasing by 6-7 percent per annum in the Arab World, the rate of expenditure on scientific research as a percentage of GDP is 0.2% in the Arab World. The world average is 1.4% (WHO,2009)

The governments in the Arab World have been given considerable attention to environmental issues. There are 40 research centres on environmental studies, 27 undergraduate

degree programmes and 24 graduate programmes on environment in the Arab World. Moreover, extracurricular activities such as marathon walks, painting competitions, and TV quizzes, among others, are also promoted to draw attention to the pressing environmental issues. But, there is still quite a ground to cover to spread awareness about health and environmental issues.

Environmental Legislation

Although, most of the Arab countries have introduced national legislations and jointed regional and multilateral treaties to protect their interests relating to health and environment, ground realities suggest that the implementation of regulations has hardly been effective. Moreover, inter-ministry co-ordination has also proved elusive in many cases.

Policymaking and management must be coordinated across the multiple public agencies that finance and deliver health services and between the public and the private sectors. Thus, governments need to develop effective regulations for both the public and the private sectors, decentralize decision making, and encourage public facilities to be more efficient.

Financing of Health and Environmental Programs

While the governments in the Arab World have been giving attention to health and environmental issues by allotting a share in their national budgets to these issues (table 2), it appears that the response of the private sector to meet health and environmental challenges has not been generally robust. Clearly, governments in the Arab countries will have to shoulder the responsibility to finance health and environment protection programs, at least in the near-term. Governments need to protect their populations from the costs of serious illness, ensure that public health programs are adequately financed, guarantee affordable health care for all sections of society, maintain efficient, and sustainable public and private financing mechanisms and implement incentive-based payment arrangements for health service providers.

The following thematic questions were addressed by the participants in the Roundtable.

Thematic Question 1

Thematic Questions

- **What are the healthcare issues interacting with broader environmental issues that have the potential to hinder socio-economic development in the Arab world?**

This key question brought into sharper focus the following.

- a. The magnitude of environmental challenges, most notably related to water resources, air pollution, and climate change in the Arab World;
- b. Policy co-ordination related to healthcare and environment in the Arab World;
- c. Developing information resources for identifying healthcare and environmental issues;
- d. Developing human resources to tackle healthcare and environment challenges;
- e. Boosting financial budgets for protecting health and environment, and
- f. Inter-ministry and inter-departmental co-ordination for responding to healthcare and environment problems.

Thematic Question 2

- **How can Arab countries respond to the emerging issues in the areas of healthcare and environment?**

This key question brought in its wake the following.

- a. Can a common declaration be designed by the Arab countries to tackle the pressing problems relating to water resources, air pollution, healthcare, and environmental security, among others?
- b. If multiple strategies are designed and implemented by Arab countries, what would be the effects for regional growth and development?
- c. Can a regional (GCC or Arab League) response be in line with a larger multilateral response being considered by the international community?
- d. Should Arab countries pool their financial, human and technological resources to respond to the problems of healthcare, water resources, air pollution, healthcare management and environment?

Contributions from the Panel

Dr. Amin Al-Amri (Chair),
Dr. Meshgan Al Awar
Professor Syed AlJunaid



The Roundtable discussions took place in the light of the critical questions facing policy makers in the Arab World. Admittedly, different questions ought to be posed in different contexts. Nevertheless, a common thread was found to be running through the discussions at the Roundtable. It was about deteriorating environmental conditions in the Arab Middle East and an appreciation of the need to design effective policies and strategies to improve environment and health for ensuring sustainable socio-economic development.

The panel members took all possible care to stay connected with the architecture of the thematic questions. Dr. Amin Al-Amri, the chair opened the session by welcoming the participants and highlighting the importance of the event in view of emerging concerns relating to deteriorating environment and its logical implications for health in the Arab World. He invited the internal moderator, Professor Moustafa Hassan to present a summary of relevant literature. Professor Moustafa's presentation focused sharply on the issues such as air pollution, aridity, drought and desertification, deteriorating water and marine resources, lack of financial resources to tackle environment-related problems and inadequate research, among others. He emphasized the importance of the Roundtable in generating useful information and recommendations for influencing policy in the Arab states.

Following Professor Moustafa's presentation, the chair invited the external moderators to make their presentations. The moderators presented a critical examination of the evolving scenario and challenges related to different aspects of environment and health policy. They shared deeper insights related to the literature review presented by the internal moderator.



Dr. Meshgan Al Awar highlighted that the external factor such as climate change has had a profound impact on land and fresh water in the Arab World. Increasing the capacity of the Arab states to deal with this challenge is particularly urgent, according to her analysis, which concluded that the Arab states

would need to give a high priority in policy making to protect water and marine resources. The healthcare system would continue to struggle in a large number of Arab countries, if steps were not taken to address the issues stemming from climate change, she argued.

Professor Syed Aljunaid expounded on the dimensions of policy and explained their links with decision making. He shared the following definitions of policy.

'A purposive course of action followed by actors or set of actors in dealing with a problem or matter of concern' Anderson (1974)

'Health Policy embraces courses of actions that affect a set of institutions, organizations, services and funding arrangement of the health care system' Gill Walt (1994)

He explained that there are two types of policy as follows.

- ▶ Policy based on political influence, including:
 - ▶ Low Politics Policy
 - ▶ High Politics Policy

- ▶ Policy based on its impact, including:
 - ▶ Distributive policy
 - ▶ Regulatory policy
 - ▶ Self-regulatory policy
 - ▶ Redistributive policy

He suggested that low politics policy may be designed by the ministry of health in any country and high politics policy may be implemented through the community and politicians.

He argued that policy can be differentiator in the areas of health and environment.

Recent years have witnessed considerable attempts by the governments and the UN agencies to integrate different mechanisms of policy intervention to protect environment so as to create greater coherence, he explained.

The panel agreed that dialogues, debates and frank discussions would prove invaluable in identifying the issues and challenges facing Arab states in their quest to protect the environment for achieving sustainable development.

Roundtable Outcomes



The participants in the Roundtable were unanimous in arguing that the challenges facing the Arab nations today and in near-term have never been more explicit and formidable. In addition to the traditional concerns about water availability and quality, food security and control of communicable diseases in the Arab World, there are new challenges to consider; for instance, from ominous climate change to policy deficits. The Roundtable produced the following outcomes.

- ▶ Dr. A. Basel Al-Yousfi drew the attention of the participants to the incongruent issues and policies existing in Arabic countries, but the main common issues are air quality, indoor heat, and climate change. He explained that 25% of burden of water scarcity is due to environmental factors which equals to 1 million mortality per year.
- ▶ Dr. Farouq El Baz explained the lack of policies to tackle water problems in the region. He highlighted the importance of underground water and the evaluation of ground water quality in terms of depth of water, quality, and chemistry of water.
- ▶ Mazin Malkawi explained the environmental burden of disease and he mentioned that WHO used DALYs to evaluate all environmental factors, and these figures are available on the WHO website. He highlighted the importance of unintentional injuries like traffic accidents taking place with rapidity in the Arab World.
- ▶ Dr. Amin Al-Amiri mentioned the absence of the Arab League from the Roundtable

- ▶ Dr. A. Basel Al-Yousfi highlighted that chemicals and wastes management is an important issue in the Arab World

The Way Forward

The Arab World is currently facing healthcare and environmental issues that are unprecedented in history. However, simply focusing on a long-term common agenda can obscure some of the real problems and challenges facing individual countries or groups of countries in the Arab World. Several scenarios are possible as follows.

First, the GCC countries are unlikely to abandon their common policy track to protect their health and environment interests. They would arguably like to continue to aggressively promote their economic development strategies and may not automatically adopt an environment protection agenda perceived to derail or even slow down the pace of economic growth and development. Nevertheless, a regional policy track such as the one unveiled at the Arab Forum for Environment and Development (AFED) in Abu Dhabi on 29 November, 2007 can of course produce tangible results.

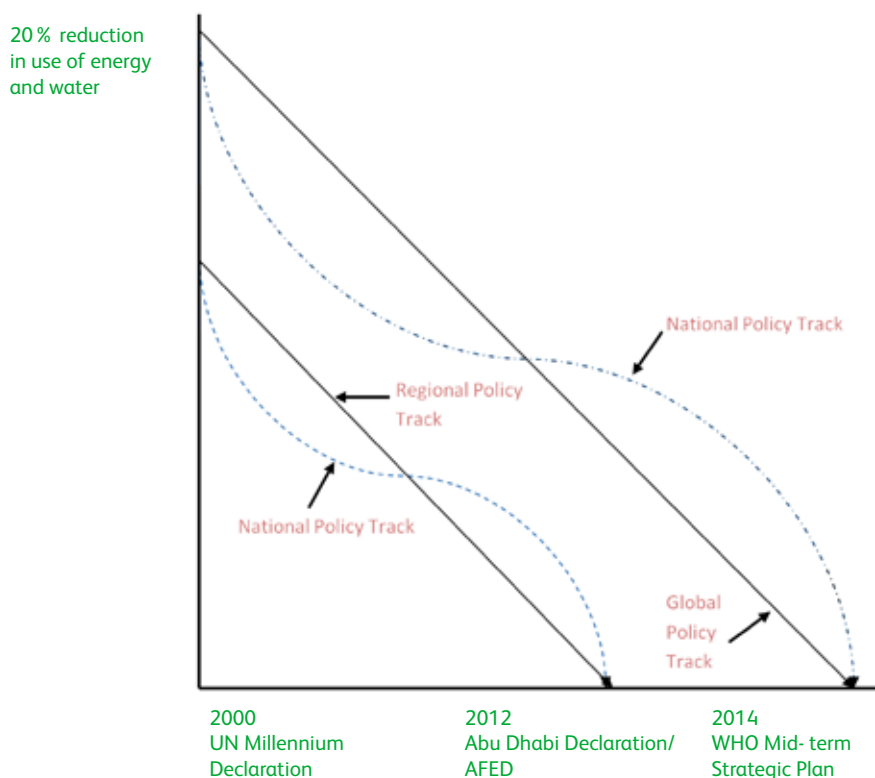
Second, it is quite possible that individual countries in the Arab World will design their own policy tracks (hovering around regional and global policy tracks as shown in chart 2) to respond to the health and environmental issues. The case in point is the Environment Agency of Abu Dhabi (EAD), which launched in April 2008 an Environment Strategy for the Emirate. This strategy has set two-year and five-year targets in the following areas: environmental sustainability, water

resources management, air quality, hazardous waste, biodiversity, environmental awareness, safety systems, organizational efficiency, emergency management and information systems.

Third, the Arab World (as a whole) may respond to the health and environmental issues under the auspices of a global treaty. For instance, WHO has developed a Mid-term Strategic Plan (2008-2014) to address the basic causes of environmental threats to health. The health sectors in the Arab World would need “to provide leadership on health aspects of international environment and sectoral policies; to advocate and establish partnerships for coordinated multi-sectoral activities and integrated policies to reduce health risks from the environment; and to promote development frameworks and strategies that benefit health”. Moreover, the Arab countries are also obliged to design their strategies in line with the UN Millennium Declaration 2000.

The scenarios are shown in Figure 1. The development of scenarios will be dependent, to a great extent, on how Arab states communicate and co-ordinate with each other and abide by regional and multilateral agreements. These agreements, in turn, are largely dependent on how strongly each country sees its particular health and environmental interests defended and its unique circumstances understood and considered.

Figure 1. Policy Tracks for Responding to Health and Environmental Issues



Undoubtedly, a well-thought-out strategic approach is needed in all the Arab countries to address pressing issues relating to healthcare management and environmental protection to achieve sustainable development. This should include, inter alia, the following

- ▶ The acknowledgement of the effectiveness of multiple policy tracks to address health and environmental issues;
- ▶ The willingness to apply laws gradually or radically to protect health and environment;
- ▶ The availability of financial resources;
- ▶ The negotiation of 'grace periods' before implementing regional or global accords in specific economic sectors in individual countries.
- ▶ The rejection of ad hoc measures to address chronic diseases and
- ▶ The transformation of Arab World into a building bloc of any global agreement on sustainable development.

A sober assessment of the issues relating to health, environment and development in the Arab World suggests that there is no doubt about the urgency to address them with the help of effective policies and strategies.

The participants in the Roundtable signed the following Declaration.

The Atlantis Declaration

The business leaders, academics, officials of health and environment ministries of the Arab states and World Health Organization meeting at the Roundtable in the Atlantis hotel in Dubai on 31 January 2011, at the invitation of the Annual Quality Congress 2011 hosted by Hamdan Bin Mohammed e-University;

Being aware of the seriousness of the healthcare and environmental challenges facing the Arab states and the world at large;

Realising that healthcare and environmental issues are closely linked;

Recognizing that:

- ▶ There is a pressing need for further research in the areas of health and environment, particularly in the Arab World;

- ▶ It is desirable to link environmental protection to sustainable development policies and strategies;
- ▶ It is the need of the hour to protect the people against risks related to unsafe water supply, sanitation, air quality, vector-borne diseases, chemicals, waste management, new toxic substances, desertification, industrial and domestic risks, and natural disasters.

Declare

1. The Arab states must streamline the Environmental Health (EH) concept as an integral part of the national decision making process at the planning, developmental and political levels, in order to avoid/minimize burdens of diseases due to environmental risk factors.
2. The Arab states must effectively integrate policies and strategies related to economic development, healthcare and protection of environment.
3. It is recommended that corporate governance in the Arab states must be anchored in the framework of sustainable development.
4. It is agreed to generate information periodically to address healthcare and environmental issues in policy making in the Arab World.
5. It is recommended that the Arab states stand united and committed to tackle the healthcare and environmental challenges at the national, sub-regional and regional levels without in any way deviating from the universal declarations signed by these states.
6. It is recommended that the Arab states promulgate effective legislation to implement decisions to improve healthcare and environment.
7. It is recommended to foster inter-ministry coordination to design and implement healthcare and environmental policies in the Arab states.
8. It is recommended that budgetary constraints be removed to tackle health and environmental issues in the Arab states.

9. It is recommended that HBMeU as well as other academic institutions in the region lead the development of educational and research programs in the field of environmental health, including formal academic curricula system, e-learning schemes, and continuing education programs (e.g., professional short courses and accredited certifications).
10. It is recommended that a basic course in health and environment be part of primary school curricula in all Arab states.
11. It is recommended that member Arab states implement WHO Eastern Mediterranean Regional Committee (RC55) resolution and framework (2008) on Climate Change and Health, initiating vulnerability assessment studies as well as national adaptation and mitigation plan.
12. It is recommended for HBMeU to create avenues and forums for generating ideas and policy options for addressing key health and environmental issues in the Arab World.
13. It is recommended to carry out a research of the diet habits in the UAE in relation to the epidemiology of disease as there is no baseline of such diet habits. This is significant as we are extensively using fertilizers and chemicals in agriculture. We should evaluate the residual amount of chemical in the fruits and vegetables.
14. It is recommended to concentrate on cost effectiveness for patients, government and doctors for using telemedicine/e-Health enabled concepts. (e.g. smart clinics, home-based non-acute treatment)
15. It is recommended to establish a health-and-environment organization with supra-national authority under the auspices of the Arab League , as the basis for plans of joint action, and
16. It is recommended that ISO health and environment standards be made mandatory for all small, medium and large organizations licensed to operate in the Arab states.

Signed

Dr. Amin Al-Amiri, the chair of the Roundtable suggested that the Atlantis Declaration and policy recommendations made by the Roundtable should be forwarded to the Ministry of Health, UAE and Ministry of Environment, UAE. The ministries should be advised to forward the document to the Arab League in 2011 with a request to seek endorsement from the WHO. A committee including the following members was formed to implement this suggestion.

- ▶ Dr. A. Basel Al-Yousfi
- ▶ Dr. Amin Al-Amiri
- ▶ Dr. Aisha Almotawa
- ▶ Dr. Meshgan Alawar

The committee was advised to monitor progress relating to the implementation of the recommendations made by this Roundtable.



Environment and Health Issues in the Arab World

Participants' Responses to Key Questions

Based on a review of literature and issues related to environment and health in the Arab World, it was decided to develop a list of questions that appeared to influence policy. The list was prepared by the HBMeU's Dean of e-School of Health and Environmental Studies following discussions with a focus group. These questions were addressed to the participants in the Roundtable through an electronic voting device. The responses are presented in Figures 2 through 5. Some interesting conclusions can be drawn from the responses. For instance, water resources emerged as the most important issue facing policy makers in the Arab World (Figure 2). This was exactly in line with the assessment of issues presented by Dr. Meshgan Al Awar. It has great implications for policy across Arab states. A sharp focus on the water issue must be a central ingredient of policy intervention throughout the Arab World.

Interestingly, it emerged that the most important constraint in tackling the identified problems was related to the absence of clear strategies in the Arab World (Figure 3). It is therefore important to design effective strategies to tackle problems in areas of environment and health. There is surely a compelling case for designing a strategic response to the problems relating to health and environment.

Figure 4 indicates that 65 per cent of the participants in the Roundtable favored development of common strategies for the Arab states. These strategies should be in line with multilateral strategies designed to address problems relating to health and environment.

Figure 5 shows that 40 percent of the participants in the Roundtable favored gaining the support of policy makers to tackle issues in the areas of environment and healthcare.

Thirty-three percent of the voters favored allocation of enough budget for tackling health and environmental issues in the Arab World. Admittedly, oil-rich countries in the Arab World have the financial resources to respond to the emerging issues and problems in the areas of health and environment. Some other countries may not have adequate financial resources to deploy in the areas of health and environment. It can be argued here that creation of a common fund under the auspices of the Arab League could serve the purpose of an Arab response to the common issues relating to environment and health. Given the political wisdom and will, it is quite possible.

Figure 2. The most important environmental issue that has consequences on population health and hinder socio-economic development in the Arab World is

(A=Aridity, drought and desertification; B=Air pollution; C=Water resources; D=Urbanization; E=Waste management, and F=Other)

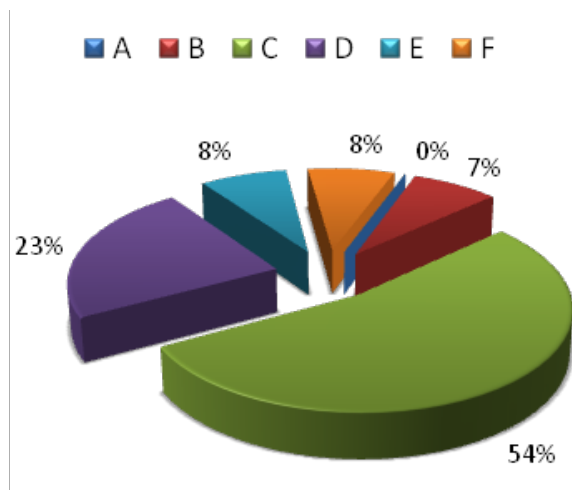


Figure 3. The most important constraint preventing tackling your identified problem is (A= Poor training of workforce; B=Absence of clear strategies; C=Problem not identified as a priority one; D=Limited budget to initiate and sustain improvement; E=Technology constraint, and F=Other)

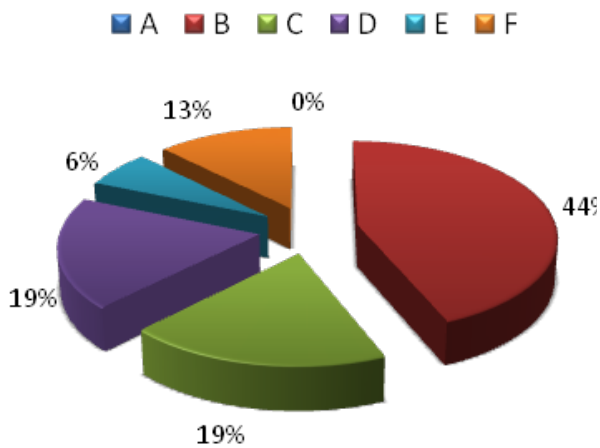


Figure 5. In your opinion, what is the most important factor that ensures the success of future strategies to solve healthcare and environmental problems?(A=Gain the support of policy makers; B=Publicise the strategies; C=Allocate enough budget; D=Technology transfer from industrial countries; E=Gain the support of the public, and F= Others)

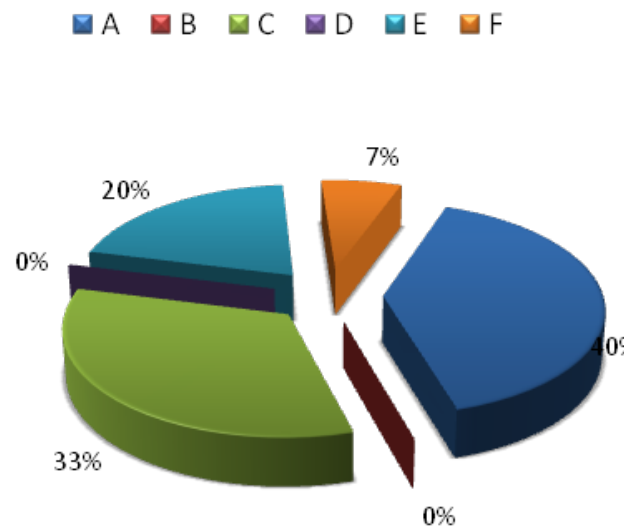
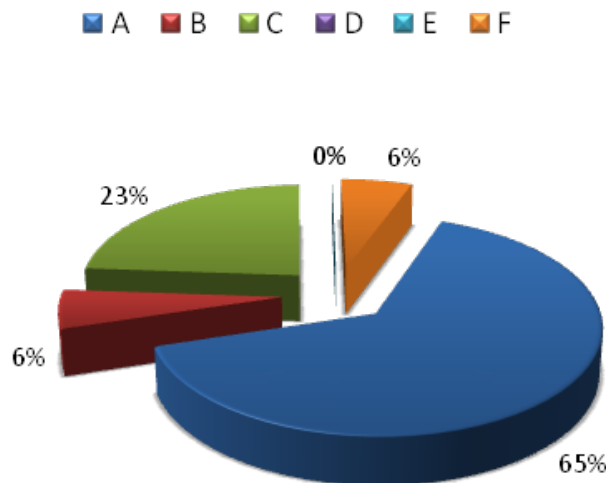


Figure 4. Do you support the development of a common framework or common strategies for all Arab countries that are in line with other multinational strategies?(A=Yes; B=No and C= To some extent)



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Directory of Participants

Panel Members		
Chair	International Experts /External Moderators	Internal Moderator
<p>Dr. Amin Al Amiri</p> <p>Assistant Undersecretary for Medical Practices and Licenses, Ministry of Health, UAE</p>	<p>Dr. Meshgan Mohammed Al Awar,</p> <p>Director of Studies, Dubai Police Academy and Secretary General, Zayed International Prize for the Environment, UAE</p>	<p>Prof. Moustafa M Hassan</p> <p>Dean of the e-School of Health and Environmental Studies , HBMeU</p>

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#	Name	Position and Affiliation
1	Dr. Aisha AlMotawa	Director of Strategic Planning and Performance Department Ministry of Environment and Water UAE
2	Dr. A. Basel Al-Yousfi	Director, Centre for Environmental Health Activities, World Health Organization
3	Dr. Farouk El Baz	Director, Center for Remote Sensing Boston University
4	Mazin Malkawi	Technical Officer, WHO Regional Centre for Environmental Health Activities
5	Professor Mohammed Zairi	Assistant Chancellor for Strategy and Growth Hamdan Bin Mohammed e-University
6	Professor Rachid Hadj-Hamou	Senior Advisor to the Vice-Chancellor Hamdan Bin Mohammed e-University

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