

# Arab Regional Strategy for Sustainable Consumption and Production

## (Final Draft)

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## 1 Introduction

Chapter 4 of Agenda 21 entitled ‘Changing Consumption Patterns’ called for ‘new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth’s finite resources’. It highlighted the need to address current unsustainable patterns of consumption and production taking into account the current imbalances across the globe in satisfying needs and the associated environmental impacts<sup>1</sup>. In order to foster the elaboration of strategies and implementation mechanisms with regional and national ownership, as well as to develop an overall “10-Year Framework of Programmes towards SCP”, a global multi-stakeholder initiative, the so-called Marrakech Process was launched in 2003. The Marrakech Process is a global effort to promote progress on the implementation of Sustainable Consumption and Production (SCP) and the elaboration of a 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP). The process responds to the call of the WSSD Johannesburg Plan of Implementation to develop a 10YFP to support regional and national initiatives to promote the shift towards sustainable consumption and production (SCP) patterns. The Commission on Sustainable Development (CSD) will review the theme of SCP during its 2010/11 two-year cycle. This strategy is the Arab’s contribution to the Marrakesh process; it highlights the priority action areas to achieve the objectives of alleviating poverty while using goods and services which use less natural resources specially energy and water.

## 2 Regional Contexts

Agenda 21 states that: the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances".

The council of Arab minister responsible for environment (CAMRE), the UNEP regional office for west Asia (UNEP/ROWA) and the Economic and Social Commission of west Asia (ESCWA), in collaboration with United Nation Department of Economic and Social Affairs (UNDESA) and UAE Federal Environmental Authority, had organized in Al Ain 17-19 March, 2008 a roundtable meeting of experts on sustainable consumption and production in the Arab region. The meeting asked the joint secretariat of the Joint Committee on Environment and Development in the Arab Region (JCEDAR) to prepare a draft regional sustainable consumption and production strategy in the Arab region in accordance with the Arab experts’ roundtable outcomes and as a contribution into the Marrakesh 10 Year Framework process (10YFP). The main outcomes of the Roundtable are:

1. Regional SCP priorities were identified as energy, water, waste, rural development & poverty eradication, education and sustainable lifestyles and tourism
2. The SCP Action Plan has to be developed under the umbrella of the Sustainable Development Initiative in the Arab Region (SDIAR) and other existing declarations. The draft strategy will be presented to CAMRE in December 2008
3. The region expressed great interest in sustainable public procurement. The experts requested a workshop to provide more information on the area to high-level decision makers.
4. The region called for the formation of a new Marrakesh Task Force on SME and technology transfer with leaderships of UAE and Brazil.
5. The region called for the setting of a regional network on National Cleaner Production Centers (NCPCs) in close cooperation with UNIDO and UNEP.
6. The region expressed the importance of discussing and analyzing further the issue of sustainable lifestyles with Youth and women as the priority groups to target.

The establishment of a program of action for the Sustainable Development Initiative in the Arab Region (SDIAR) as well as this SCP strategy is to be under the umbrella of the provisions of a number of regional declarations including the Arab Ministerial declaration on sustainable development (2001), Jeddah Declaration on the Islamic Perspective for Environment (2002), the Abu Dhabi Declaration on Perspectives of Arab Environmental Action (2001), the Oman Declaration on Environment and Sustainable Development (2001), the Abu Dhabi Declaration for Agricultural Development and Combating Desertification, the General Framework of Islamic Agenda for Sustainable Development (2002), and the outcome of the Amman International Forum on Environment and Sustainable Development (2001). It will also take into consideration the outcome of the relevant international and regional conferences and symposiums, such as the Dubai Declaration on the Integrated Management of Water Resources in Arid Zones (2002), the Muscat Declaration of the Oman International Conference for the Development and Management of Watercourses (2002), Arab Ministerial declaration on strategic approach of chemicals management (2005), and the Arab declaration on climate change (2007). Priorities of actions were explicitly identified in those regional declarations as outlined in Appendix (1). Some relevant regional and or national initiatives are listed in the same Appendix.

### **3 Rationale for Sustainable consumption and production in the Arab Region**

Rapidly expanding populations, rural-urban migration, and widespread subsidies have contributed to a rising demand for energy in the Arab world since 1990. Normally, there are disparities among Arab countries on levels of energy intensity; seven Arab countries have energy intensity above the world average. The energy sector has adverse impacts on air, water, land and marine resources, and contributes to global climate change. Average per capita CO<sub>2</sub> emissions in the Arab countries of west Asia increased from 6 to 7.2 tonnes between 1990 and 2003, compared to a world average of 3.9 tonnes. The high dependency on natural resources by some Arab resources intensive economies has made them very vulnerable to economic shocks and fluctuations in international prices, with profound repercussions on growth, employment and economic stability, as well as on the environment. The CO<sub>2</sub> emission increases resulted not only from industrial expansion and use of fossil fuel, but also from a growth in the number of vehicles, poor traffic management, energy subsidies, inefficient public transportation, ageing cars and congested roads, especially in the Mashriq sub-region. In GCC countries,

power, petrochemical, aluminum and fertilizer plants, as well as motor vehicles are the primary sources of CO<sub>2</sub> and other air pollutants<sup>2</sup>.

Parts of the Arab region, specifically in west Asia, are one of the most water-stressed regions in the world. Reflecting rapid population growth and socio-economic development, overall per capita freshwater availability has fallen, while consumption has risen. With an average consumption range of 300–750 litres/person/day, GCC residents rank among the highest per capita water users in the world. Desalination of seawater provides the bulk of municipal water in the GCC countries, but sustainability is hampered by a lack of demand management and price signaling mechanisms. Agriculture uses more than 80 per cent of the region's available water. Aided by subsidies, irrigated agriculture has expanded to achieve food security, but inefficient methods and poor planning have put immense pressure on the limited resource.

Rapid urbanization, inadequate waste management and lifestyle changes have resulted in increased waste generation with high contents of organic materials. Per capita solid waste ranges between 0.6 and 1.4 kg/person/day. The inability of existing waste management systems to cope with the ever growing waste generation rates has led to significant health and environmental problems. Additionally, rapid industrialization has led to growing rate of hazardous wastes in the region especially from oil, metals and chemical industries.

Cleaner production (CP) concepts and tools have been introduced in some Arab countries within the gradual evolution of the environmental management at the national levels. National CP centers have been created, or are in the process of starting up, in most countries. Tunisia was the first country in the region to open centre introducing CP in industry in 1996, followed by Morocco, Lebanon, Egypt, Algeria and Syria. The UAE announced recently the establishment of the National Cleaner Production Center. Other Arab countries are in process of establishing their respective NCPCs. In addition, UNEP/DTIE is developing a regional cleaner production center proposed in Jordan. As mentioned above, during the Al Ain expert meeting, the Arab region called for the setting of a regional network on national cleaner production centers in close cooperation with UNIDO.

## **4 Vision**

The Arab 10YFP SCP aims to promote the concept of sustainable consumption and production in the Arab region through encouraging the utilization of products and services that ensure environmental protection conserve water and energy as well as other natural resources, while contributing to poverty eradication and sustainable lifestyles.

## **5 Priority implementation areas**

### **5.1 Energy for Sustainable Development**

The Arab energy sector has played and will continue to play an important role in the region and the global economy as well. In addition to satisfying energy needs for economic and social development, it is the source of oil and gas export revenues contributing as well to economic development. The Arab Oil and Gas sector represents the largest economic sector in the region. The proven reserves of crude oil in the Arab countries is accounted for nearly 58 % of the world's total, while those of natural gas were estimated at about 30% of the world proven reserves. By the end of 2006, the Arab oil exporting

countries produced nearly 23 million barrels a day (mbd) of oil and 355<sup>a</sup> billion cubic meters of gas (bcm), thereby accounting for about 31.7% and 12.5 % of the total global oil and gas production, respectively. With oil exports of 20.5 mbd and annual gas exports of 100 bcm, the Arab countries were responsible for 43% and 15% of total oil and gas exports, respectively. In 2006, the oil sector (oil and gas production, processing and refining) contributed 40 % of the total GDP. On the other hand, Oil exports reached about 419 billion US\$ in current prices of 2006. Increase of oil revenues were the main drivers for economic development in most of the Arab oil producing countries. Due to the remarkable recent increases of the oil prices and the escalated levels of oil production in some Arab countries, the Arab oil revenues have witnessed a parallel unprecedented growth.

The Arab economies, as well, are heavily dependent on oil and gas to meet their domestic energy demand. Oil contributes about 53.6 % of the total demand and the share of gas represents about 43.9 %, while other resources such as hydro power, coal, and renewable resources represent only about 2 %<sup>3</sup>.

The region also enjoys good potential of renewable energy resources with 8967 MW of installed hydro-electric capacity. Solar resources vary between 1460-3000 KWh/m<sup>2</sup>/year. Wind resources are also available in several Arab countries and it has been commercialized in Egypt.

In many cases, the efficiency of energy production and consumption patterns in the region requires improvement. Though the per capita energy consumption in the GCC sub-region are among the world's top list, more than 40 percent of the Arab population in rural and urban poor areas do not have adequate access to energy services. It is also noted that almost one-fifth of the Arab population relies on non-commercial fuels for different energy uses. The electrification rates in the Arab countries in 2007/2008 varied from as high as 100 percent in countries like Kuwait, Lebanon and Bahrain to as low as 25-30 percent in Sudan<sup>4</sup>. Energy consumption indicators in the Arab region in 2003 were as follows:

1. The average primary energy consumption reached 1196 kgoe per capita, compared to the world average of 1523 kgoe. Wide disparities exist in the levels of energy consumption within and between Arab countries.
2. The average electricity consumption reached 1445 kwh per capita regionally, compared to the world average of 2271 kwh per capita, and
3. The average primary energy intensity in the region is 0.51 kgoe per US\$ compared to a world average of 0.27 kgoe, reflecting the low economic returns on energy consumption in the region<sup>5</sup>.

Relying heavily on fossil fuels, it is evident that the current trends in the Arab energy sector are unsustainable. The move towards achieving the objectives of energy for sustainable development requires policies and measures to address such problems, while maintaining the effective contribution of the sector to the region's prosperity. Since 1992, Arab countries have been moving towards the sustainability of the energy sector to achieve the goals and targets relevant to the key energy issues identified in Agenda 21, PFIA 21, CSD-9, CSD-15 and JPOI. Some progress was achieved; however, more steps are still required to achieve the same objectives.

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<sup>a</sup> Gas production in 2005

A partnership on energy for SD is already established through CAMRE in close cooperation with concerned regional organizations, including OAPEC, UNEP and ESCWA. Seven main Arab declarations have been issued expressing the Arab countries concerns and commitments towards the achievement of sustainable development. These declarations are namely:

- The Abu Dhabi Declaration on Perspective of Arab Environmental Action (2001)
- Energy and the Arab Initiative for Sustainable Development (2002)
- The Abu-Dhabi Declaration on Environment and Energy (2003)
- The Sana'a Statement on Renewable Energy (2004)
- Cairo Declaration (2006)
- Damascus Declaration (2007)
- Arab Ministerial Declaration on Climate Change (2007)
- Kuwait Declaration of the Arab Economic and Social Development Summit(2009)

In the Abu Dhabi declaration on environment and energy, the Arab Ministers of Energy and Ministers of Environment agreed on a broad framework of measures and programs, expressing their political will towards developing a more effective role of the energy sector in achieving sustainable development in the region, and is emphasized on the following:

- The importance of achieving sustainable development and alleviating poverty in the region, through increasing access to affordable, reliable energy services particularly to rural and remote areas using a mix of available conventional and renewable energy resources.
- The need for developing national strategies for promoting the sustainability of the Arab energy sector.
- The importance of promoting regional energy integration projects, particularly electric grids interconnections and natural gas networks.
- Calling on Developed Countries to adopt measures, programmes and financial resources to support developing countries, including Arab countries in their programs for achieving sustainable development, with particular emphasis on R&D, capacity building, and technology transfer<sup>6</sup>.

### 5.1.1 Objectives

- To improve energy accessibility
- To improve energy efficiency
- To support cleaner and more efficient utilization of oil and natural gas resources
- To increase share of renewable energy in the fuel mix
- To disseminate renewable energy technologies especially in rural and remote areas<sup>7</sup>
- To support development of carbon sinks through sustainable afforestation.
- To address the deterioration of air quality in many Arab cities.

### 5.1.2 Energy policies recommended

In recognition of the need to move towards more economic and sustainable management of the energy sector, and to promote sustainable consumption and production of energy, countries in the region will continue to develop their energy policies to include one or more of the following:

- To increase energy access for all communities mainly in rural and remote areas;
- To review existing energy tariffs so as to integrate environmental and social costs and to support the economic management of the sector while maintaining energy subsidies for the poor;
- To promote investments in cleaner technologies for oil and gas exploration and production, and to adopt measures for reducing the sector's environmental impacts;
- To promote intra-regional electric grid interconnections and natural gas networks projects;
- To encourage private sector participation in the establishment and management of energy facilities, including power plants and distribution networks;
- To improve energy efficiency of energy production and consumption, particularly in energy intensive industries, transport, and power;
- To promote the wide use of cleaner fuels;
- To develop and promote the wide use wide renewable energy technologies.
- To support the promotion of cleaner production in the energy sector
- To support air quality management through better urban planning and land use, and the establishment of regional and sub regional systems and networks for sustainable transport and use of cleaner vehicles.

## 5.2 Water resources management

Among the major development challenges in the Arab region has been the scarcity of water resources. Due to its geographic location, the Arab region is one of the most water stressed areas in the world. The region accounts for about 3% of the world's population, 10% of its land, but only 1.2% of the world's renewable water resources. The most ten water stressed countries in the world are Arab countries, and there are eight Arab countries with annual per capita water consumption equals less than 500 cubic meters. About 50 million people lack access to safe drinking water and about 80 million people lack access to safe sanitation<sup>8</sup>.

The vital importance of water can hardly be overstated. Water largely determines the pattern of settlement and plays a crucial role in life-style. Health and nutrition depend on the availability of water of acceptable quality, and it is an essential input for most economic activities, especially in rural areas where the agricultural sector consumes around 80-85% of the water supply in most countries of the region.

The main driving forces for water problems in the region are the burgeoning population, the accelerated development and competition for water in the urban, industrial and agricultural sectors, ineffective water management policies and practices, erratic precipitation and the highly volatile regional peace and security situation. Further, more than 10 rivers flowing from outside the region supplying around 65 percent of the renewable water supplies are vulnerable to extraction by upstream riparian countries<sup>9</sup>. The growing water claims of upstream riparian countries of shared water resources has resulted in further reducing the share of the downstream Arab countries, especially in Syria and Iraq.

Water quality has also become a major issue of concern in the Arab Region. Water pollution, mainly with sewage discharges, industrial wastes and agricultural effluents represent a serious threat to human health and further aggravate water scarcity by reducing clean water availability which will affect human health, water productivity, and quality of life.

With the projected increasing scarcity of fresh water availability, and future population growth, priority will increasingly be given to domestic consumption to meet basic needs. This future shift from irrigation to domestic water use requires careful analysis of the various factors affecting efficient utilization of water resources<sup>10</sup>. Water use efficiency barely exceeds 40 percent in most of the Arab countries. Strategic planning should therefore stress on water productivity – production of any commodity per unit of water – and focus especially on the agriculture sector, in order to attempt to achieve more value per unit of water. In this regard, the concept of virtual water should be promoted in the region to help reduce water shortages and minimize wastes. The concept of virtual water refers to the amount of water *embedded* in certain goods; that is, the amount of water required to produce those goods. Thus, it could be of economic value to import water-rich products instead of growing them domestically and losing the scarce available water resources. This would make more water available for use in other needed sectors. This concept needs to be widely promoted in the region to help realize Arab food security.

To meet the growing water demand, most of the Arab countries have been developing non-conventional water resources especially desalination of sea water in the GCC Sub-Region. The widely penetrated desalination technologies in the region have been those fuelled by oil and gas exacerbating the environmental impacts and carbon emissions. Accordingly, this has led to increasing the energy and CO<sub>2</sub> emissions per capita specifically in the GCC countries as more than 60% of the world's desalinated water is produced in those countries. Other environmental impacts of desalination plants include brine and thermal pollution of the marine environment; increase salinity of aquifers, with impacts on agricultural production; and oil spills and tanker discharges which threaten the marine ecology and water intakes for desalination plants in the Gulf. Sustainable production of desalinated water and its quality is another important issue for the region. Other Supply augmentation options used include reuse of treated wastewater and agriculture drainage, and encouraging rain-fed agriculture by using rainwater harvesting and flash flood waters.

Significant progress has been made in different countries of the region to overcome the water scarcity and ensure sustainable development. The historical water supply side management practices have been abandoned in favour of a comprehensive integrated water resources management approach, including water demand management (Appendix 1).

Demand management includes reducing losses in water use through for example use of water saving technologies in the industrial and domestic sectors and modern irrigation technologies like sprinklers and trickle irrigation.

Reforms in the water sectors in the Arab region focus on decentralization, privatization, demand management, economic efficiency and environmental sustainability. It is worth to note that an Arab Ministerial council for water resources management has been lately established within the League of Arab States which met for the first time in June 2009 in Algeria. In response to a request from the Arab summit in Kuwait, the newly established council is working on the development of an Arab strategy for water security and a regional integrated water resources management plan.

### 5.2.1 Objectives

- To encourage the integrated management of water resources (IWRM), including river basins and water catchments, on the basis of international law and existing agreements.
- To protect water resources, including surface and groundwater, wetlands and regional seas from pollution.
- To support the efforts to develop alternative water resources and developing sustainable technologies for water desalination, rainwater harvesting and the recycling and efficient reuse of treated waste water.
- To promote efficiency of water consumption in different consuming sectors<sup>11</sup>.

### 5.2.2 Water Policies recommended

Policies to achieve sustainable consumption and production of water resources based on a wide array of management tools of IWRM include:

- Adopt integrated water resources management taking into account socio-economic goals to achieve sustainable development. This could be implemented through a participatory planning and implementation process that brings stakeholders together to determine how to meet the long-term needs for water while maintaining essential ecological services and economic benefits. IWRM calls for creating enabling policy and institutional framework, and the use of the right mix of policy instruments and management tools including for example, economic and regulatory instruments.
- Development and wide use of sustainable desalination technologies
- Recycle and efficient reuse of treated waste water.
- Establish wastewater treatment for domestic, industrial and agricultural effluents to improve water quality
- Develop and enforce water quality standards to protect water resources against pollution.
- Water demand management to improve water use efficiency in different consuming sectors through for example, reducing water losses in various consuming sectors, use of modern irrigation techniques in agriculture, and improve infrastructure for drinking water distribution.
- Adopt policies, including market-based instruments, for water cost recovery.
- Optimize the use of virtual water to meet food demand and achieve food security in the region.
- Enhance the role of civil society and NGOs to improve water efficiency and water conservation
- Adopt IWRM to improve efficient use of water in agricultural practices and irrigation methods to save water in the agriculture sector.
- Monitoring climatic changes in the Arab region and their impacts on water and food security<sup>12</sup>
- Enhance regional cooperation and integration in water resources management to achieve water and food security
- Support enabling activities to secure the rights of down-stream countries in shared surface water resources.

## 5.3 Waste management

Population and economic growth, accelerated rate of urbanization, rapid industrial development, rising standards of living and changing consumption patterns have all contributed to a sharp increase in solid

waste generation and change in its composition and characteristics in the Arab Region. It is predicted that the amounts of municipal solid wastes generated in the Arab Region in the Year 2020 can exceed 200 million tons per year. Available statistics on municipal solid waste in some Arab countries show obvious correlation between the per capita income and the rate of solid waste generation i.e., higher GDP causes higher waste generation. The same figures indicate that nearly 80% of the total municipal solid wastes in the Arab Region are decomposable and recyclable reflecting both consumption patterns and profile of the packaging industry. On average approximately 50 to 60% of municipal solid wastes is organic and about 10% paper, 7% plastic, 4% glass, 4% metals, and 4% textiles.

In many countries up to 50 per cent of the waste generated may be left uncollected especially in remote and rural areas. Primitive methods of disposal are still practiced in some parts of the region, including open dumping and burning, as well as mixing of municipal with industrial and medical wastes when disposed off. Often hazardous wastes may intermingle with municipal wastes during handling and disposal. Problems related to old landfill site contamination, residential areas intrusions, and sequential remediation and rehabilitation efforts are rising in several countries. The integrated waste management strategy (i.e., from cradle-to-grave) with its universal hierarchy has been introduced recently in several countries as well. Modern collection, treatment and disposal systems have started to be employed, such as vehicle collection and sorting, composting, incineration of medical wastes, and sanitary landfilling. Recycling, reuse and recovery are still at infancy stages, nonetheless are gaining popularity<sup>13</sup>.

With few exceptions in GCC, there is rarely any controlled disposal of hazardous wastes in the region, although certain areas of dumps are usually designated for hazardous wastes. An exception is the industrialized city of Jubail, Saudi Arabia, and the hazardous waste landfill in Bahrain. Another successful project has been implemented for hazardous waste management in Egypt, UAE and Qatar.

At the regional level, as per the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal, in 1995, by Decision III/19 of the third COP meeting of the Convention, Egypt was selected as the host country for the Regional Centre for Training and Technology Transfer serving the Arab countries of North Africa and West Asia (BCRC-Egypt). The main tasks of the Centre include building the capacity of the Arab countries in hazardous waste management, Basel convention, collection, management and dissemination of information on waste generation, management and disposal in the region. It also provides technical assistance and advisory services and training to enforcement officials, waste producers and waste managers on e.g. legal and institutional matters, preparation of national waste inventories and data management systems, techniques for waste minimization, management and safe disposal, mobilization of financial and human resources, etc.;

The availability of data on hazardous waste and waste producing activities in the Arab region, although very important to develop proper policies and hazardous waste management plans, is very scarce. National Legislation is one of the most powerful tools for controlling and limiting the impact of hazardous waste problems. Many of the countries of the region have included in their national legislations provisions to control hazardous waste management practices. During enforcement of these laws, weaknesses of the legislations have been noticed, and revision and enforcement of these legislations deemed necessary<sup>14</sup>.

E-waste has become an important health and environmental issue. Recycling electronic goods involves exposure to dangerous metals, such as lead, mercury and cadmium, which can be toxic to humans and ecosystems if they are improperly handled or disposed of. The need to build capacities for the proper

and safe handling methods for E-waste is urgently required. Currently e-waste recycling efforts in the Arab region have mostly been limited to random and small scale initiatives. It is envisioned that the implementation of an E-waste management programme in the Arab region will be executed through Public-Private Partnerships, in cooperation with other entities, particularly Non-Governmental organizations (NGO). Government institutions can support this initiative by providing the necessary enabling environment for effective E-waste management. A forum is planned that will include executive level entrepreneurs from ICT private sector enterprises, ICT government organizations, environmental agencies, and non-government organizations. A key objective of this forum is to share knowledge about E-waste management success stories, from an international, regional, and national perspective.

### 5.3.1 Objectives

- Adopting integrated solid waste management strategy and emphasizing the preventative and recovery components of 3Rs to achieve the cradle-to-cradle approach.
- Protect human health and the environment by promoting waste avoidance and minimization and by utilizing waste as a resource wherever possible.
- Protecting human health and the environment against hazardous wastes including E-waste.

### 5.3.2 Policies recommended

- (a) Promote the adoption of sustainable integrated solid waste management (ISWM) strategies with emphasis on preventative and recovery hierarchy
- (b) Develop policy, legal and institutional frameworks supportive of ISWM
- (c) Develop financial frameworks to reflect full cost accounting, user pay and polluter- pay principles
- (d) Use market incentives to develop recycling market.
- (e) Promote waste avoidance, reduction, reuse and recycling (3Rs) by waste generators and consumers.
- (f) Building institutional capacity of municipalities on MSW management.
- (g) Encourage private sector participation and stewardship in ISWM activities
- (h) Promote sustainable production practices in the industry
- (i) Raise public awareness of sustainable consumption and production and the consequences of inadequate solid waste management
- (j) Capacity development for safe and sound management of hazardous wastes.
- (k) Promote on-site sorting and separation of various waste streams
- (l) Foster regional cooperation in research and development for exchange of experience in the field of MSW management and hazardous waste management.

## 5.4 Rural Development and eradication of poverty

Rural development is a process which aims at bringing about progressive economic, social, cultural and environmental improvements in rural communities. It combines local initiatives with Governments' formal efforts for achieving natural resources efficiency and human development improvements, and for ensuring equity of benefits distribution. Most of the countries in the Arab region are predominantly agrarian, and for that reason agricultural development constitutes a major core area for rural

development activities which are geared towards the bringing about of overall improvements in rural life<sup>15</sup>.

Agriculture is an important sector for many Arab countries. It is seeking to achieve food self-sufficiency and food security and provides important contributions to national income, employment, exports and industry. Arab agriculture productivity has improved during the last decade. Though exports have increased in the same period, increase of imports has been larger leading to a continuous trade deficit in agriculture commodities trade<sup>16</sup>.

Agriculture remains the primary user of freshwater in the region consuming more than 80 per cent of available resources. Agriculture also affects land resources, mostly because of socio-economic policies. Over the past three decades, agriculture policies have targeted food security and employment generation through agricultural development. They aimed at institutional reforms through for example attracting private investments, phasing out government subsidies, and revising the role of governments to focus on supporting services such as research, development and extension. This has led to the expansion of cultivated lands, adoption of intensive production systems, investments in agricultural machinery and agro-chemicals. To respond to the scarcity of water resources, many Arab countries have invested in more efficient irrigation technologies. Wastewater reuse schemes reveal increased average yields, higher productivity rates and improved efficiency. Integrated water resources management approaches are gradually promoted in many Arab countries as well.

The agricultural development in the Arab region is facing a set of challenges including inefficient use of natural resources especially land and water, unwise selection of crops, unplanned urban expansion, deforestation, and intensive use of agrochemicals leading to pollution and land degradation. To address these challenges, the Arab leaders adopted Tunisia declaration on sustainable agriculture development and food security in 2004. Furthermore, the Arab summit in Algeria in 2005 called for the development of an Arab Strategy for sustainable agriculture development for the coming two decades (2005-2025). This strategy was developed by the Arab Organization for Agriculture Development (AOAD) and was adopted by the Arab summit in Riyadh in 2007<sup>17</sup>. Presently, AOAD in cooperation with regional and international organizations, especially FAO and UNDP has been working to implement the Arab strategy for sustainable agriculture development. Lately, the Arab Ministers for agriculture, during their thirtieth meeting of the general assembly of the AOAD had adopted the Riyadh declaration to strengthen Arab cooperation in facing the current world food crises. The declaration calls for, among others, Arab regional cooperation in addressing the issue of food security, mobilizing national, regional, and international resources to achieve the objectives of the Arab strategy for sustainable agriculture development, and developing appropriate policies and measures to limit the use of food crops in producing Biofuels in the Arab region and maximizing their production from agriculture wastes instead<sup>18</sup>. In its last meeting in Kuwait (2009), the Arab summit launched the Arab emergency food security project and requested the Arab governments to offer the needed incentives to attract private investments in agriculture.

There has been intense urbanization in the Arab region especially in West Asia over the past two decades. This has overstretched urban infrastructure, and had significant impacts on the region's environment and natural resources. Natural population growth, rural migration, displacements due to armed conflicts, economic transformations, and increased migrant labor in GCC have resulted in higher demand for water and energy, waste management challenges and the deterioration of urban air quality. In the same time, urbanization tends to be one of the major factors of brain drain deteriorating rural development.

Poverty in the Arab region can be found mostly in the rural areas. Rural areas are often impoverished due to a lack of access to services such as proper education and healthcare, as well as decent housing, road networks, water and energy, and choice of jobs<sup>19</sup>. Thus, rural development is inevitable for poverty eradication.

According to the World Bank, while only 2.4% of the MENA region's population lives in absolute poverty under an income of \$1 a day, this figure jumps to a more realistic 23% for incomes of only \$2 a day. The prospects of the Arab region as a whole for poverty eradication are encouraging; however, wide gaps both among and within Arab sub-regions, remain. Iraq, Palestine, and the Least Developed Arab Countries (LDCs) will likely fail to meet the poverty related targets of MDGs by 2015 without drastic improvements in their economic and political situation. Vast disparities in performance appear between the Arab Least Developed Countries (LDCs) and the other sub-regions. The Arab region would remain to suffer from a high poverty rate if the severe problems of the Arab LDCs are not addressed. Accordingly, for the Arab region to reach the MDGs by 2015 it has to accelerate the pace of its efforts through well designed and focused reforms and development policies, supported by regional cooperation and integration programmes among the Arab countries, especially in the areas of inter-Arab trade, private direct investment, labor mobility, and official development assistance<sup>20</sup>

Even though women's access to education has tripled since 1970, gender disparities persist. Over half of the women remain illiterate; women occupy less than five per cent of the seats in Arab legislatures.

#### **5.4.1 Objectives**

- To achieve better quality of life for rural populations
- To narrow the development gap between rural and urban areas.
- To achieve food security and achieve the MDG of halving the number of people suffering from hunger by 2015
- To eradicate poverty while giving the role of women due consideration

#### **5.4.2 Policies recommend**

- Improve rural infrastructure systems
- Enhance access to modern sustainable energy services, including renewable energy resources, to foster economic and social development in rural areas, in line with the MDG's of reducing people living in extreme poverty by half.
- Improve access to water and sanitation in rural areas in line with the MDG's goals.
- Extend green microfinance services to rural population
- Improve access to education and health services in rural areas.
- Promote effective public investments in agriculture and rural development.
- Promote sustainable agriculture practices to achieve food security (e.g. organic agriculture)
- Promote sustainable irrigation practices (e.g. dripping irrigation)
- Achieve gender parity in development
- Promote conservation of natural resources
- Enhance natural and cultural heritage through sustainable tourism development.

## 5.5 Education and sustainable lifestyles

In December 2002, resolution 57/254 on the United Nations Decade of Education for Sustainable Development (2005-2014) was adopted by the United Nations General Assembly. The Decade aims to integrate the values inherent to sustainable development into all aspects of learning to encourage changes in behavior which will enable a more viable and fairer society for everyone. It also means that education must be of a high quality. The principles of sustainable development must find their place in children's schooling, higher education, non-formal education, the media, and community-based learning activities. This means education will have to change so that it addresses in addition to job market trends, the social, economic, cultural and environmental problems we face in the twenty-first century<sup>21</sup>.

Recognizing the urgency of developing common solutions to the problems of the Arab education systems, The Arab Summit in Khartoum in 2006 asked the Arab League Educational Cultural and Scientific Organization (ALECSO) to prepare a strategic plan to develop education in the Arab world. ALECSO has prepared that plan which was adopted by the Arab summit in Damascus in 2008. The strategic plan identifies strengths, weaknesses, challenges and opportunities to develop the Arab education systems in order to achieve a set of objectives. It also emphasizes the inter-linkages between education and sustainable development. The plan recommends a pan-Arab research projects in a number of priority areas such as biotechnology, water desalination, and environmental protection<sup>22</sup>.

The SDIAR calls for supporting the development of strategies and national programs for education and illiteracy eradication as a part of the strategy for poverty eradication and also through support to the implementation of the internationally agreed upon objectives on education, including those contained in the Millennium Declaration. Most Arab countries have been implementing national programs to eradicate illiteracy, and reform national education systems.

The net enrolment rate in primary education in the Arab region increased by 10 percent since 1990/1991; it reached 80.5% in the school year 2004/2005. The respective gender parity index (GPI) increased from 0.81 in 1991 to 0.92 in 2005 as most countries are on track towards reaching gender parity at the primary level by 2015. Nonetheless, the Arab region needs to accelerate the rate of progress substantially in order to ensure universal primary enrolment by 2015. However, this rate of progress varies significantly across the countries. This is exemplified by the fact that almost two thirds of the more than 7.5 million out-of-school children in the region live in the Arab LDCs. Despite considerable progress over the past 15 years, about one child in two was out of school in the Arab LDCs in 2005. It should be noted that enrolment rates have dropped by over 6 percentage points since 1990 in Iraq, due to economic sanctions and, subsequently, war, and by over 16 percentage points since 1999 in Palestine due to continued oppressions by the Israeli occupation forces. In 2005, around 81% of the students eligible to reach the last grade of primary school did so. However, progress in completion rates over the past 15 years has not been fast enough to place the region on track towards meeting the MDG<sup>23</sup>.

Considering that the Arab world has the largest share of youth among developing regions, youth in the Arab region are a critical stakeholder in the region's economy and will be the main actor and motor for the achievement of the MDGs and the implementation of the Johannesburg plan of implementation. The success of the MDGs for youth today will ensure the well-being of future generations. Thus, involving young people in the efforts to realize the objectives will greatly help in assuring future sustainability. The habits Youth develop now will play a decisive role in future consumption patterns, markets and lifestyles. Recent data indicate that the average youth literacy rate in the GCC countries rose to 95.9% - the highest rate in the Arab region. By contrast, in the Arab LDCs, almost one out of three young people are illiterate<sup>24</sup>, a disparity gap that needs to be bridged.

Through the youthxchange initiative, UNEP and UNESCO try to show young people that it is possible to translate our aspirations for a better world into everyday actions. In particular, youthxchange underlines how sustainable consumption directly relates to quality of life, efficient use of resources, reduction of waste, and ethical issues such as for example child labor. The region should continue to tap on the resources available through the YXC initiative in order to make young people aware of opportunities offered by more sustainable lifestyles and empower them to make a difference starting from their daily lives<sup>25</sup>.

Driven by economic growth, technological advancements, cultural and social factors, consumption patterns in most of the Arab Countries have witnessed dramatic changes during the past decades. In many Arab countries, especially the GCC, the number of cars on the roads is increasing, tourism, leisure and business trips are becoming more frequent, and the ownership of household appliances and communication gadgets are growing. Many products, e.g. mobile phones, audio-video equipment previously seen as luxuries are now becoming necessities in most of the Arab countries.

Consumption of water and electricity is on the rise, as well as waste generation. In per capita terms, a large discrepancy in energy use persists between the GCC countries and the rest of the Arab countries. Per Capita energy consumption in all the GCC is higher than the world average. Per capita electricity consumption in the former remains among the highest in the world as well. The situation regarding water consumption is no exception. Despite the scarcity of water resources in most of the Arab countries, per capita water consumption is relatively high. Large disparities in consumption are still mounting among different Arab countries and between the rich and the poor in the same country. Changing consumption habits needs persistent educational and public awareness efforts. This would include combination of government policies and business strategies, encouragement of individual and community actions, involvement of NGOs and academia, contribution of media, role models and advertisers.

### 5.5.1 Objectives

- “Supporting the development of strategies and national programs for education and illiteracy eradication as a part of the strategy for poverty eradication”<sup>26</sup>
- Introduction of sustainable consumption and production (SCP) issues and sustainable lifestyles into formal learning processes considering appropriate links to non-formal and informal education

### 5.5.2 Policies Recommended

- Support the implementation of the internationally agreed upon objectives on education, including those contained in the Millennium Declaration
- Promote eco-labels, fuel efficiency standards and appliances energy efficiency standards to improve resources utilization
- support green public procurements
- Promote green building standards (in collaboration with the Sustainable Building and Construction Initiative)
- Promote sustainable tourism through education, housing and awareness-raising

- Develop sustainable public transport systems
- Use economic instruments to internalize environmental costs in the pricing schemes of goods and services.
- Introduce the concepts of ecological footprints into the formal and informal education curricular and activities
- Encourage dematerialization and eco-efficiency strategies to design products and services with fewer natural resources and lower wastes
- Use the power of media, advertising, and community and religious leaders in promoting resources conservation and eco-efficient products and services through social and environmental marketing
- Empower and Involve NGOs and Youth Organisations in public education , facilitate behavior changes, and improve environmental literacy
- Develop, and enforce consumer protection laws, and encourage consumer protection organizations.
- Combat new “consumerism” concepts invading the region by resurrecting sustainable practices embedded in the Arabic and Islamic heritage.

## 6 Capacity building needs

In achieving the goals and objectives in the priority areas defined above, the Arab region calls for the international community to support the Arab efforts through Providing technical assistance to strengthen the capacities of the Arab countries, including institutional, financial and human capabilities in the following areas:

- Development of SCP action plan
- Use of market-based instruments in policy development
- Resource efficient cleaner production.
- Eco – design, eco-packaging, eco-efficiency and eco-labeling
- Life Cycle Analysis.
- Corporate social and environmental responsibility and Extended producer responsibility
- Environmental accounting and Internalization of environmental and social costs
- Environmental Risk Assessment
- Green procurement
- Environmental goods and services
- Innovative green financing schemes including Microfinance
- UN guidelines on consumer protection
- YouthXchange Programme for Sustainable Lifestyle
- Sustainable tourism
- Development and implementation of integrated water resources management plans

## 7 Stakeholders and their engagement

### 7.1 Major Stakeholders

In addition to governments, industry (including SMEs), civil society, individuals, and international organizations are key stakeholders in achieving sustainable consumption and production to reduce poverty and drive sustainable economic growth, while protecting the environment.

### **7.1.1 Role of Governments**

Governments as both consumers and policy setters have an instrumental role to play in SCP. Decision makers directly and indirectly influence consumer behavior and the sustainability of production. Information and education campaigns, economic instruments or regulation (standard setting) can influence consumption and production patterns. Governments have a central role to play in law promulgation and enforcement, and in using economic incentives to influence consumer choices towards sustainable goods and services. Additionally, Government is also one of the biggest consumers of products and services. It can leverage its support for sustainable procurement to promote change<sup>27</sup>. The use of market-based instruments in policy development has been relatively rare in the region. Additionally, sustainable public procurements practices are new to the region as well. To strengthen the role of governments to develop and implement the right mix of policies identified above, capacity building in those two areas has been identified.

### **7.1.2 Role of business and industry**

The quality of life for increasing numbers of people in the region is dependent on the practices of multinational corporations and small and medium sized enterprises (SMEs) as well as the behavior of consumers and policies of governments. Businesses have large potential to offer for shaping sustainable consumption and lifestyles both in their role as suppliers of goods and services and as customers. They are involved in building infrastructure, designing products and delivering services. In their role as suppliers, companies need to employ dematerialization and eco-efficiency strategies to design products and services with less use of resources. Companies can contribute to sustainable lifestyles also by improving their own internal practices such as improving energy efficiency and implementing recycling programs. Business can show commitments to sustainability through voluntary adopting the concepts of social and environmental responsibilities, implementing cleaner production practices, and accepting extended responsibilities for their products.

### **7.1.3 Role of media and advertising sector**

The media is also another important stakeholder for pursuing changes in consumption and production patterns. The media has the power to influence consumer preferences toward sustainable products and lifestyles. Advertising and marketing are perhaps the most powerful tools that can create attractive visions of more sustainable futures and lifestyles, and to educate and engage consumers in taking steps towards translating these visions into everyday practices. However, media is much broader concept than just advertising and newspapers. It includes TV, magazines, books, fashion shows and much more<sup>28</sup>. The role of celebrities and community leaders such as religious leaders in promoting more sustainable habits and lifestyles is also very important. All these channels will be employed to realize the vision of the regional strategy. Special attention should be given to youth, children and women who are greatly influenced by media and are, at the same time, playing a crucial role in consumption.

### **7.1.4 The role of NGOs and Civil Societies**

NGOs are widely involved in campaigns and initiatives that increase public awareness about sustainable consumption patterns at local and national level. They educate and provide information; they act as advocates and lobbyists for sustainable consumption and as pressure groups and watch-dogs of the progress from the bottom-up. There are numerous NGOs that are working on improving environmental literacy and facilitating behavioral change in the Arab countries. Governments, regional and international organizations are requested to support the efforts of NGOs through for example building their capacity in areas such as campaigning, lobbying, monitoring and public education. Youth and women organizations should play more active role in public education and social marketing of

sustainable lifestyles. Workers and Farmers unions should push more for consumers' protection, corporate social responsibilities and fair trade.

### **7.1.5 Role of Individuals**

In their role as consumers people greatly influence the market for sustainable products by making more sustainable purchasing choices. In their role as citizens they undertake proactive and more extensive actions aimed at reducing environmental and social impacts of their lifestyles. They initiate or become members of community-based or/and grass-root initiatives. An increasing number of Arab individuals started to join the NGOs community and participate in its public education initiatives that aim to change behavior on the side of consumers. Governments need to play more active role in educating individual consumers through for example facilitating information flow and access to information by citizens. On the other hand, individuals need to change their consumption habits and lifestyles towards more sustainable behavior. Sustainably responsible individual would consume less energy and water, select green products and would generate less wastes and emissions. However, consumption is partly a social activity that is influenced by many socio-economic and cultural factors. It is worth to note that empirical studies on consumption behavior are rare in the Arab countries; a gap needs to be filled. Arab Families need to avail for the Arab heritage and social values to fight consumerism and other westernized lifestyles spread among new generations with the influence of the unprecedented advances in the information and communication technologies.

### **7.1.6 Role of Regional & International Intergovernmental Organisations (CAMRE & UN Organization):**

Within the framework of their mandates and by maximizing the use of the available expertise in the region, UN organization in collaboration with CAMRE and in partnerships with governments and NGOs can do the following:

- To strengthen the capacity of governments in creating enabling environment conducive to better promote SCP at national level, through national SCP action plan.
- To build the institutional capacity of governments in the area of accreditation and certifications of EMS, and eco-labeling.
- To build the capacity of governments in cleaner production through establishment of national cleaner production centers (NCPCs). This can also be achieved through enhancing south-south cooperation using the existing capacity in the regional as well as the national centers, and through establishing a regional network of NCPCs.
- To build the capacity of governments and provide technical support in hazardous waste management using the capability of the only regional center located in Cairo, and the available expertise in some Arab countries.
- To help Arab countries working together to address common challenges by sharing best practices and success stories.

## **7.2 Stakeholders engagement**

Stakeholder engagement means working directly with organizations and stakeholder groups to create understanding of their experiences and perceptions, identify and resolve areas of misunderstanding or conflict, establish common goals and priorities, and agree on actions to achieve policy objectives.

Stakeholder engagement approaches should foster the three fundamental methods of communication, consultation, and partnership<sup>29</sup>. Taking into consideration the socio-economic and cultural contexts, a number of engagement approaches are recommended. These include:

- A SCP newsletter
- A SCP interactive website
- A focus group on each of the priority areas
- A Multi-stakeholder forum for each of the priority areas

## 8 Monitoring and evaluation

Indicator-based monitoring is one of the most effective forms of monitoring and evaluation. Indicators are valuable tools for tracking progress on set priorities and targets. Arab indicators for SCP are incorporated within broader sets of development, poverty reduction, environment or sustainable development indicators. Key indicators of sustainable consumption and production include those which show the extent of ‘decoupling’, i.e. to how extent the link between economic growth and environmental damage is broken?

The indicators listed in table (1) include all indicators within the Arab Framework set of indicators that are relevant to sustainable consumption and production, in addition to ‘decoupling’ and other indicators relevant to the sustainable consumption and production priorities outlined above. It should be noted that these indicators could be monitored at both the sub-national (Rural-Urban), national, sub-regional and regional levels.

Table 1: SCP Indicators

Priority areas	Indicators	Units
Energy use	<ul style="list-style-type: none"> <li>• Annual energy consumption</li> <li>• Share of renewable energy sources in total energy use</li> <li>• Energy intensity</li> <li>• Per capita energy consumption</li> <li>• CO2 per GDP</li> <li>• CO2 per Capita</li> <li>• Percent of leaded gasoline sold in total</li> <li>• Sulphur content in Diesel</li> </ul>	TOE % Toe/1000\$ TOE per capita Ton / 1000 \$ Ton per capita % ppm
Water	<ul style="list-style-type: none"> <li>• Annual Withdrawal of Ground and Surface Water as Percent of Renewable Water</li> <li>• Domestic Consumption of Water Per Capita</li> <li>• Domestic Water Use as a % of Total Water Demand</li> <li>• Agriculture water use as a % of total water demand</li> <li>• Industrial water use as a % of total water demand</li> </ul>	% Cu.m per capita % % % %

	<ul style="list-style-type: none"> <li>• Irrigation water use efficiency</li> <li>• Domestic water use efficiency</li> <li>• Industrial water use efficiency</li> <li>• Percent of water bodies conforms with national standards<sup>30</sup></li> </ul>	<p>%</p> <p>%</p> <p>%</p> <p>%</p>
Waste	<ul style="list-style-type: none"> <li>• Generation of waste</li> <li>• Generation of municipal wastes per capita</li> <li>• Generation of hazardous waste</li> <li>• Waste treatment and disposal</li> <li>• Rate of recycling</li> <li>• Rate of recycling of E-Waste</li> </ul>	<p>Ton / year</p> <p>Ton per capita</p> <p>Ton/ year</p> <p>Ton/year</p> <p>%</p> <p>%</p>
Rural development	<ul style="list-style-type: none"> <li>• Share of imported food compared to locally produced food</li> <li>• Electrification rate of rural population</li> <li>• Road services, km/cap.</li> <li>• Percent population with access to safe drinking Water and sanitation</li> <li>• Rural Adult Literacy Rate, by sex</li> <li>• Non-employment rate</li> </ul>	<p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p>
Poverty eradication	<ul style="list-style-type: none"> <li>• Percent population under poverty line</li> <li>• Proportion of population with access to improved sanitation, urban and rural</li> <li>• Non-employment rate</li> <li>• Proportion of Population with Access to Safe Drinking Water</li> <li>• Adult Literacy Rate, by sex</li> <li>• Proportion of population living in slums</li> <li>• Gender Parity Index in education</li> </ul>	<p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p>
Education and sustainable lifestyles	<ul style="list-style-type: none"> <li>• Adult Literacy Rate, by sex</li> <li>• Completion rate of Secondary Education</li> <li>• Share of purchase of eco-labeled Products/total consumption purchase</li> <li>• Share of cars in passenger transportation</li> <li>• Share of Green certified buildings in total per year</li> <li>• Share of ISO 14000 certified companies in total per year</li> </ul>	<p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p>

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