

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA)

**REVIEW OF PRODUCTIVITY AND SUSTAINABLE DEVELOPMENT
IN THE ESCWA REGION
FIRST ISSUE**

**GREEN ECONOMY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT
AND POVERTY ERADICATION: PRINCIPLES, OPPORTUNITIES
AND CHALLENGES IN THE ARAB REGION**

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CONTENTS

	<i>Page</i>
Executive summary	vii
Introduction	1
<i>Chapter</i>	
I. GREEN ECONOMY: PRINCIPLES AND CONCEPTUAL FRAMEWORK	2
A. Background and definitions	2
B. Components and pathways	3
C. Regional preparation process for Rio+20	5
II. DEVELOPMENT CHALLENGES IN THE ARAB REGION	9
A. Macroeconomic policies and priorities	9
B. Employment and youth development	11
C. Social progress and poverty eradication	13
D. Urbanization	14
E. Energy and oil sector	18
F. Natural resources and environmental issues	19
G. Climate change impacts and financing opportunities for a greener economy	25
H. Peace and security, and political instability	28
I. Youth revolutions and uprisings	29
III. MAJOR CONCERNS AND PERCEPTIONS ON THE TRANSITION TO A GREEN ECONOMY	32
A. Environmental standards, non-tariff barriers to trade and competitiveness	32
B. Impacts of green subsidies	32
C. Retraining and the creation of decent jobs	33
D. Measuring progress towards the transition to a green economy	33
IV. OPPORTUNITIES FOR MAINSTREAMING GREEN ECONOMY IN NATIONAL SUSTAINABLE POLICIES AND PLANS	35
A. Objectives	35
B. Energy efficiency and the promotion of renewable energies	35
C. Industry	37
D. Trade	38
E. Liberalization of public environmental services	39
F. Tourism	40
G. Protecting ecosystems	41
H. Construction	41
I. Transportation	43
J. Water provision	43
K. Sanitation	45
L. Waste management	45
M. Agriculture	46

CONTENTS (continued)

	<i>Page</i>
V. PREREQUISITES FOR THE TRANSITION TO A GREEN ECONOMY IN THE ARAB REGION	48
A. Policies, governance and mainstreaming green economy principles in national development plans and regional agendas.....	48
B. Private sector involvement.....	48
C. Strengthening the role of civil society and encouraging partnerships	48
D. Accelerating regional integration and implementing the Greater Arab Free Trade Area	49
E. Articulating innovation and research and development systems	50
F. Improving education and promoting vocational training and retraining programmes.....	50
G. Technological transfer and new financing arrangements.....	51
VI. INSTITUTIONAL SETTINGS FOR SUSTAINABLE DEVELOPMENT AND THEIR SUITABILITY FOR THE TRANSITION TO A GREEN ECONOMY	52
A. Current settings and evaluation.....	52
B. Suitability for the transition to a green economy	54
VII. PROPOSED PRIORITIES AND REQUIRED ACTIONS FOR THE PREPARATION OF AN ARAB STRATEGY ON GREEN ECONOMY	55
VIII. CONCLUSIONS AND RECOMMENDATIONS	58

LIST OF TABLES

1. Pathways towards a green economy in the context of sustainable development.....	4
2. Green economy activities of key organizations at the national, regional and global levels	7
3. Unemployment and projected numbers of new jobs required in selected Arab countries.....	12
4. Social progress measured by achievements in MDGs.....	15
5. Agriculture and water use indicators for selected countries in the Arab region	22
6. Self sufficiency ratios for food commodities.....	23

LIST OF FIGURES

I. The green economy process.....	4
II. Green economy and achieving social and economic integration.....	5
III. Share of Arab youth to total unemployment.....	12
IV. Unemployment rate among Arab youth	12
V. Urban populations in Arab countries, 2010	18
VI. Renewable water resources in Arab countries, 2008.....	20
VII. Food production and population ratios, 1990-2004.....	21
VIII. Conceptual framework for climate change impact and vulnerability assessment of water resources and related sectors	26
IX. Possible constituents of a green economy framework.....	55

CONTENTS (continued)

Page

LIST OF BOXES

1. Renewable energies enable the creation of more than 1,000 new companies in Tunisia	36
2. Wind energy in Egypt.....	37
3. Environmental management policies and SME competitiveness in industrial zones in Jordan	38
4. Case study of a green investment in the hotel industry and return on investment.....	40
5. Protection of fisheries in the Mediterranean Basin.....	41
6. Selected examples of green building and housing in the Arab region.....	42
7. Sustainable transport and cleaner fuel vehicles	43
8. Water metering and saving devices in the GCC countries	44
9. Water harvesting for drinking in small villages in India	44
10. Biological treatment of wastewater in Lake Manzala, Egypt	45
11. Public-private partnership for municipal solid waste management in the United Arab Emirates	46
12. Industrial ecology in Denmark	46
13. Examples of green agriculture in Morocco and Uganda	47
14. The Green Skills Agreement in Australia.....	51
15. Key questions and issues in the transition to a green economy	57
16. Key components of a national/regional green economy strategy	57

LIST OF ANNEXES

I. Preparatory Meetings for Rio+20	61
II. Outcome of the Arab Regional Preparatory Meeting for Rio+20.....	71

Executive summary

Countries in the Arab region are at a turning point in their development process whereby people are challenging the established order and demanding better standards of living and improved access to resources, jobs, water and clean environment. The region is characterized by important disparities across and within countries in economic growth rates as well as in social progress. The whole development paradigm is put in question, with far-reaching implications on the use, share, value and management of natural resources in this process. A review of the Millennium Development Goals (MDGs) indicators reveals that the countries of the Gulf Cooperation Council (GCC) are mostly set to achieve the targets, despite a concern on the goal relating to gender equality. There has been mixed progress in middle-income countries, while the least developed countries (LDCs) of the region are unlikely to achieve the targets.

Overall, progress has been made in enrolment in education despite a rapidly increasing population. However, there are concerns across the region on achieving MDGs related to ending poverty and hunger, achieving gender equality and improving maternal health. The lack of peace and security is seriously affecting the efforts of achieving MDGs in Iraq, Palestine, Somalia and the Sudan. Water shortages, desertification and, more generally, the inefficient use of natural resources show that the region is at the forefront of most of the environment issues that currently face the world. Moreover, despite high levels achieved in some countries, economic growth has seldom translated into full employment and continues to coexist with unequal income distribution and deficiencies in most social services, including education and health. Social tensions, exacerbated by democratic deficiencies, are major characteristics of most of these countries. The turmoil they have witnessed since the beginning of 2011 highlights the urgent need to design and implement a new vision for sustainable development in the region.

Financial, food and climate-change crises, which have significant bearing on water resources, energy and the environment, have shifted the debate from one of trade-off between the economy and the environment to one where sustainability considerations provide an avenue for economic growth. The United Nations Conference on Sustainable Development (UNCSD), which is also referred to as Rio+20, is set to convene in 2012 as a follow-up to the United Nations Conference on Environment and Development, which was 20 years earlier in 1992 in Rio de Janeiro. Rio+20 has been conceived within this framework of achieving sustainability and eradicating poverty, while taking stock of progress and gaps, and reaffirming political commitment to principles of sustainable development. These preparations for Rio+20 are taking place against the backdrop of rising concerns by the international community on the ability of translating into practice the principles of sustainable development.

Rio+20 is set to focus on two themes of particular relevance to the Arab region today, namely green economy in the context of poverty eradication and sustainable development and the institutional framework for sustainable development. In this connection, ESCWA has been mandated by the General Assembly to lead regional preparations for Rio+20 by convening a number of consultation meetings with various stakeholders in order to reach a harmonized vision on the transition to green economy and to identify the required actions and priorities based on the specificities of the Arab region. This preparatory work is being undertaken in collaboration with other concerned United Nations entities, specialized organizations within the League of Arab States and countries in the Arab region.

Green economy is relevant in the context of poverty eradication and sustainable development. The United Nations defines green economy as one in which the vital links between economy, society and environment are taken into account; and in which the transformation of production processes, production and consumption patterns revitalize and diversify economies, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution.¹ Moreover, a green economy approach can provide the contours of an institutional framework for sustainable development given that a

¹ Within the context of the latter, this transformation is achieved by contributing to a reduction per unit in produced waste, pollution and the use of resources.

participatory approach to development is required and that achieving a green economy is only possible through a collective vision, creativity, action and support from a broad cross-section of society, including governments, the private sector, multilateral development and financial institutions, and consumers.

There are four arguments that support a green economy approach to sustainable development and poverty eradication in the Arab region, namely:

(a) There is international evidence that green economy provides promising venues to development. The United Nations Environment Programme (UNEP) shows that a reallocation from “brown” investment to “green” investment enhances long-term economic performance and can increase total global wealth while enhancing stocks of renewable resources, reducing environmental risks and rebuilding capacity to generate future prosperity;

(b) There is a critical mass of successful initiatives, pilot projects and policy measures adopted in the Arab region that are centred around the concepts of green economy and that warrant a closer investigation aimed to critically and systematically assess these experiences, draw relevant lessons for development policy formulation and explore means of scaling-up success stories;

(c) A transition to green economy provides a good opportunity to adopt development paradigms that prioritize institution-building and a participatory approach to development;

(d) Rio+20 provides an excellent opportunity for Arab countries to explore avenues for policy coherence and greater regional cooperation on means to operationalize a post Rio+20 agenda on renewed commitment for sustainable development.

There is concern about the impact of the financial and food crises on the region’s economic growth in the medium term. If these persist, the drop in volumes of development aid for LDCs, in workers’ remittances and in foreign direct investment (FDI) in all countries could lower the general levels of investment, which in turn would negatively affect economic growth. Inflationary pressures can aggravate this tendency given that most countries have eased their monetary policies in order to keep financing social programmes. This has become more worrisome since the beginning of 2011, with attempts to ease social tensions by increasing food subsidies and Government jobs. While targeted social programmes are more complicated to design, they are absolutely vital if the region is to combine economic growth and stability with social protection.

The recent revolutions and youth uprisings, collectively referred to as the Arab Spring, raise hopes of increased democracy across the Arab region. In the long term, when the transitions succeed and the new institutions are fully in place and operational, increased democracy and freedom will undoubtedly help to establish a better business environment, encourage investment in productive and promote value added economic activities, which in turn will create jobs and decrease unemployment. However, there are significant challenges for the region in the short and medium terms. Uncertainties on the exact nature of the institutional settings that will be governing each country and on the precise macroeconomic policies that will be followed have halted investments and economic activity has slowed down in several countries. Those countries most affected by the Arab Spring called on the international community for financial support over the next year to the tune of US\$1 billion for Tunisia and US\$10-12 billion for Egypt, which was approved by world leaders during the G8 Summit at the end of May 2011.

This study suggests a set of priorities and actions aimed to reach a coherent position among Arab countries in dealing with green economy. These priorities are as follows:

(a) To take into account the specificities of the Arab region while at the same time recognizing the major subregional differences within the region;

(b) To involve all components of civil society and the private sector at all stages of the definition and the implementation of the vision;

(c) To build on the successes as well as learn from the failures of previous sustainable initiatives and particularly those of the national sustainable development councils;

(d) To propose a vision for implementing the green economy activities as part of building the institutional framework for sustainable development in Arab countries;

(e) To propose at the inception stage of the green projects a monitoring and evaluation framework intended to measure continuously the economic and social impact of green economy actions undertaken within the region;

(f) To be ready to seize the opportunity of the Rio+20 Conference for gaining international support.

Several reforms have been proposed in order to make the current institutional setting of sustainable development more relevant to the green economy vision. Specifically and of relevance to the Arab region, these important recommendations include major efforts by governments towards defining and implementing the action plans of national sustainable development strategies as well as towards coordinating these strategies with all governmental strategies, increasing the involvement of local authorities and civil society in all stages of the definition, implementing and following up development plans, and promoting more effective coordination between all United Nations bodies. In addition, there is a need to develop more systematic monitoring and evaluation mechanisms of all actions that have been undertaken.

The views of the Arab countries on transition to green economy were clearly reflected during the Arab Regional Preparatory Meeting for Rio+20 that was held in October 2010.² It was stressed that any concept of green economy to be agreed upon in the future shall not imply that the green economy is an alternative for sustainable development but rather a tool to achieve it.

In addition, if an international concept of the green economy is to be adopted, special emphasis shall be placed on the principle of gradual transition to a green economy, in accordance with the socio-economic characteristics of individual countries and through the adoption of appropriate policies.

For an efficient transition towards a green economy, there is a need for an explicit implication of the private sector in the institutional framework. The place of the private sector in this setting is crucial in order to ensure that investments as well corporate cultures towards environment and sustainability are in line with the green economy concept.

The key recommendations of this study are as follows:

(a) The green economy agenda has a wide scope given that it deals with all socio-economic and environmental aspects. Consequently, it is advisable to initiate green economy activities based on prioritized actions in key sectors that will have immediate and short-term impacts on the Arab societies, especially youth, women and poor and vulnerable groups;

(b) While there are several success stories of Arab initiatives in the context of green economy, there is a need to conduct an inventory to collect other best practice and lessons learned in order to document these existing Arab green initiatives and to build on them in other countries across the Arab region;

² ESCWA, 2011. Arab Regional Preparatory Meeting for the United Nations Conference on Sustainable Development (Rio+20). Cairo, 16-17 October 2011 (E/ESCWA/SDPD/2011/WG.5/8).

(c) Promoting green job opportunities in the Arab region within the new atmosphere of transition to democracy in many countries in the region will require serving training needs and skills development in support of innovation, research and development (R and D), and the transfer of green technologies from developed countries;

(d) It is essential to empower civil society in the region and to encourage partnerships aimed at boosting the momentum of the genuine transfer to greener economies in the region. Special programmes and platforms could also serve to support green investment in and by small and medium enterprises (SMEs), particularly with regard to generating both green jobs and income opportunities through greening the economy;

(e) The demand for green economy should be fostered through increased awareness and understanding among consumer groups and civil society. Access to information is one of the primary tools by which consumers can be made aware of the implications of their consumption decisions. In order to achieve this, consumers, community-based organizations and the media are therefore important partners in terms of raising awareness on green economy concepts and principles;

(f) There is a need to intensify capacity-building programmes for public and private sectors on green economy, while stressing the role of United Nations organizations and non-governmental organizations (NGOs) in this area;

(g) The success of green economy interventions will depend on building effective public-private sector partnerships that provide bridges between the environmental, economic and financial communities;

(h) The green economy should not be seen only as revolving around industrial policies or low-carbon activities; rather it should embrace a wide range of policies covering all productive and environmental sectors from the Arab region, including the regulations and reforms required for the transition to a green economy;

(i) In order for Arab countries to have a stronger position and identity in global negotiations and international meetings, there is a need to adapt Arab initiatives and positions towards the global agenda and to promote full involvement with counterparts in other developing regions, thereby benefiting from South-South cooperation and advancing interregional and joint activities that support sustainable development across the Arab region;

(j) There is a need to promote international cooperation in order to support developing countries, especially in the areas of technology transfer, green financing, micro-financing, trade and investments, and best practice for existing climate change adaptation and mitigation mechanisms. The role of United Nations and its various agencies should be highlighted particularly with regard to supporting the concept of the green economy in its Member States;

(k) There is a need to develop regional economic models and modalities for assessing the cost and benefits of transition to a green economy, and its potential in promoting economic growth, job creation and poverty eradication in the region. Equally, there is a need to develop reliable indicators that are specific to the region and to measure the progress made in green economy activities;

(l) Arab Governments must be encouraged to adapt green economy concepts and create an investment climate that attracts related projects and technologies, and create national and regional institutional frameworks to facilitate coordination between all agencies concerned with the transition to a green economy.

Introduction

A green economy is an economy that results in improved human well-being and reduced inequalities over the long term, while seeking to minimize the exposure for future generations to significant environmental risks and ecological scarcities.³ In recent years, the concept of sustainable development has been moving from an “environmentally centred” approach where the focus is on ecological considerations to a paradigm where economical and social development are conditioned to less or non-polluting, resource-efficient activities that protect and enhance biodiversity and ecosystem services. It is argued that such an approach is necessary in order to protect the environment and, moreover, that it is the only way to engage in job creating and socially inclusive activities.

ESCWA is mandated by the United Nations General Assembly to lead regional preparations for the United Nations Conference on Sustainable Development (UNCSD), equally referred to as Rio+20, which is scheduled for 2012 as a follow-up to the United Nations Conference on Environment and Development (Rio de Janeiro, 3-14 June 1992). The Conference in 2012 is being prepared against the backdrop of rising concerns in the international community on the ability of translating into practice the principle of sustainable development.⁴ On the socio-economic front the food crisis has gained momentum since 2008 and 2009, with at least 1 billion people worldwide at risk of hunger. Concomitantly, the ongoing international financial crisis has increased unemployment and poverty in many parts of the world. This has prompted a re-examination of the fundamentals that foster economic growth and the principles that guide development policy.

On the environmental front, the United Nations Framework Convention on Climate Change (UNFCCC), through its Fourth Assessment Report (2007) of the Intergovernmental Panel on Climate Change (IPCC), estimates that global emissions are projected to increase by 70 per cent, with corresponding temperature increases of 4-6°C by the end of the century for various scenarios. This significantly exceeds the target agreed in Copenhagen of staying within a rise of 2°C by the end of the twenty-first century. Furthermore, the United Nations estimates that, by 2030, water scarcity will become chronic, posing significant challenges in terms of the policies and funding needed to ensure access to clean water.⁵

The green economy has been promoted by the international community as a pathway towards economic recovery and sustainable development in recent years. This paradigm is a framework which aims to make operational the concept of sustainable development by stimulating investment in the environment as a means of promoting sustainable economic growth (green growth) and poverty reduction. Green economy promotes the integration of environmental considerations from the early design stages of any economic development model, policy or business enterprise.

The ongoing debate in this process is of concern to the Arab region, particularly given that it relates to youth unemployment, balanced geographical growth, water scarcity and desertification. Many countries in the region are already embarked in green economy initiatives aimed at addressing these problems.

In that light, ESCWA has prepared this report on green economy principles, opportunities and challenges facing the Arab region for the purpose of supporting regional preparations for Rio+20 and as a key output of several consultation meetings on various fields and with different sectors, and in order to reflect better the regional perspectives on green economy.

³ United Nations Environment Programme (UNEP), 2010, *Green Economy Report: A Preview*.

⁴ The principle was summarized in 1987 by the Brundtland Commission as the objective of meeting the needs of the present without compromising the ability of future generations to meet their own needs.

⁵ UN-Water and FAO, 2007, *Coping with Water Scarcity: Challenge of the Twenty-first Century*; and UN-Water, 2009, *World Water Development Report 3*.

I. GREEN ECONOMY: PRINCIPLES AND CONCEPTUAL FRAMEWORK

A. BACKGROUND AND DEFINITIONS

The concept of sustainable development was articulated in 1987 by the World Commission on Environment and Development (WCED), more commonly referred to as the Brundtland Commission. It sought to address, in a balanced manner, economic, social and environmental concerns by meeting the needs of the present without compromising the ability of future generations to meet their own needs.⁶ The global debate regarding the components of sustainable development has also generally recognized the importance of governance and financing as integral components necessary for the achievement of sustainable development.

Green economy concepts thus initially emerged at the global level as a proposed path for overcoming the financial, food and climate crises. As a result, the United Nations Green Economy Initiative was launched in 2008 and stated that greening the economy referred to “the process of reconfiguring businesses and infrastructure to deliver better returns on natural, human and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using less natural resources, creating less waste and reducing social disparities”.⁷ This was complemented by the Global Green New Deal advocated by the Secretary-General of the United Nations to encourage countries to adopt green stimulus packages as a means to overcome the economic crisis and combat climate change. By January 2009, several countries, including Japan and South Korea, had committed themselves to investing billions of dollars to stimulate job creation and income generation through low-carbon, green growth strategies.⁸ China followed with a suite of green investments in strategic economic sectors oriented towards investments in climate change mitigation.

The green economy approach is the process by which this principle is made operational. It is assumed that by integrating environmental considerations at every stage of production, consumption and policy design, social and economic imbalances can be corrected and the accelerated trend of environmental destruction can be arrested. Thus, greening economies helps in achieving MDGs by alleviating poverty and generating new jobs. As such, MDGs are good measures for assessing the implementation of green economy concepts in national development and sectoral plans at the national level.

The emergence of the green economy concept provides a fresh look at the relationship between the economic and environmental pillars of sustainable development as well as the social dimension by aiming to reduce poverty and improve welfare. It also provides a way to reinvigorate support for sustainable development through a new conceptual framework that does not replace sustainable development, but rather reinforces the economic and environmental pillars of sustainable development through increased integration.

While to date there is no universally agreed definition of what constitutes a green economy, UNEP states that a “green economy is an economy that results in improved human well-being and reduced inequalities of the long term, while not exposing future generations to significant environmental risks and ecological scarcities”.⁹ More recently, UNEP refined the definition of green economy as one that results in “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”.¹⁰

⁶ NGO Committee on Education, 1987, *Our Common Future: Report of the World Commission on Environment and Development*, available at www.un-documents.net/ocf-ov.htm.

⁷ UNEP, *Green Economy Initiative*, available at <http://www.unep.org>.

⁸ UNEP, 2009, *Japan and the Republic of Korea launch green new deals*.

⁹ UNEP, 2010, *op. cit.*

¹⁰ UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, available at www.unep.org/greeneconomy.

The United Nations Issues Management Group (IMG) on a Green Economy, which brings together a host of United Nations organizations within the framework of the Environmental Management Group led by UNEP, agreed in March 2010 that green economy was a concept that “brings together a suite of policies to promote investment in environmentally significant sectors while contributing to the pursuit of sustainable development and poverty eradication. These are derived from a range of economic approaches, concepts, ideas and principles, many of which have been articulated over the past twenty years”.¹¹

These statements demonstrate the evolution in the concept of the green economy from one that was initially oriented towards promoting the green economy as a means of overcoming the global financial crisis and the climate crisis through low-carbon growth to one that promotes economic stimulus through investments across all environmental sectors.

In the light of these definitions, the green economy fundamentals are those that promote investment and economic stimulus through environmental sectors, provide a pathway towards sustainable development and preserve consistency with Rio Principles that were endorsed in 1992. However, the Arab countries emphasized that if an internal concept of the green economy is to be adopted the transition to green economy should be gradual and in consistency with socio-economic characteristics of individual countries and through the adoption of appropriate policies.¹²

From the standpoint of Governments of developed and developing countries, the opportunity and potential for green economic growth can be significantly cultivated. While discussions initially coupled investments in a green economy to low-carbon green growth strategies, global perceptions regarding the characteristics and components of what constitutes a green economy have matured and evolved over time. Green economy paradigms have therefore become more inclusive and encompassing to include investments and interventions that address a range of environmental management challenges, rather than limited to those related to low-carbon and climate change interventions. Additionally, green economy initiatives are no longer constrained to the achievement of green economic growth in the short term; rather they are now also focused strategically on transforming economic development paradigms to advance efforts aimed to improve social conditions through poverty eradication and, consequently, to achieve sustainable development over the long term.

B. COMPONENTS AND PATHWAYS

There is an emerging consensus on what characterizes a green economy and, moreover, growing agreement on what constitutes the key components of a green economy. Specifically, these include the “full range of instruments and tools available to policymakers, from taxes and charges, environmentally harmful subsidy removal, to standards and regulations, education and skills development, institution-building, knowledge development, capacity-building for data collection and assessment, and improved planning and governance”.¹³

Within that context, it is useful to think about two ways of approaching a transition to a green economy (see figure I). That is, economies can be greened through two non-exclusive paths, namely (a) by “growing the green” that involves launching new socio-economic development projects in which environmental concerns are taken into consideration at the conception stage and then at all the subsequent implementation, monitoring and evaluation stages of the project; and/or (b) by “greening the brown” that involves reorienting and/or correcting current production and consumption patterns by improving their environmental performance. These two tracks are complementary and mutually reinforcing and can be supported through a series of Government policy interventions and programmes that can spark the

¹¹ UNEP, First Meeting of the Issue Management Group on a Green Economy (Washington, D.C., 23-24 March 2010).

¹² ESCWA, 2011. Arab Regional Preparatory Meeting for the United Nations Conference on Sustainable Development (Rio+20). Cairo, 16-17 October 2011 (E/ESCWA/SDPD/2011/WG.5/8).

¹³ Ibid.

engagement of the private sector and civil society, and ensure the commitment of regional stakeholders to transition to a green economy. Sample interventions for both tracks are shown in table 1.

Figure I. The green economy process



Green economy initiatives are also mutually supportive of sustainable consumption and production interventions. As such, efforts should be made to ensure consistency at the global, regional and national levels between strategies that advance a transition to a green economy and sustainable consumption and production patterns within a sustainable development framework by addressing, for instance, the achievements of MDGs.

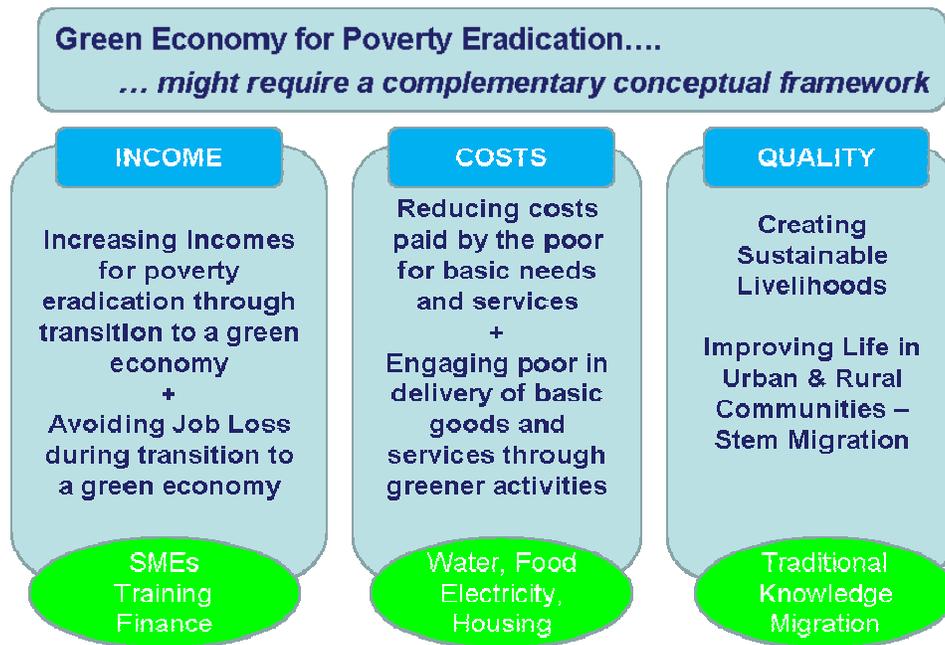
TABLE 1. PATHWAYS TOWARDS A GREEN ECONOMY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Growing the green	Greening the brown
<p><u>Creating new socio-economic opportunities based on new green activities</u></p> <ul style="list-style-type: none"> • Improved trade flows with a focus on environmental goods and services • The production and distribution of renewable energies • The development of regional green curricula, innovation and R and D activities and technology transfer • Fostering entrepreneurship, education and retraining 	<p><u>Creating new socio-economic opportunities by greening existing economic activities</u></p> <ul style="list-style-type: none"> • Promoting sustainable transport • Greening construction and design • Greening electricity production • Improving efficiency and delivery of water management systems and desalination processes • Promoting sustainable agriculture and sustainable livelihoods
<p><u>Expected benefits</u></p> <ul style="list-style-type: none"> • Promotion of near carbon free activities • New avenues for economic growth • New jobs • New sources of income • Youth employment in new sectors 	<p><u>Expected benefits</u></p> <ul style="list-style-type: none"> • Reduced carbon emissions • Improved public transportation • Less water stress • Improved food security • Rural development and increase of income • Reduced land degradation and desertification

Consequently, green economy can be considered as a tool for achieving social and economic integration (see figure II). There is also a general consensus that green economy should be consistent with the Rio Principles that were formalized twenty years ago at the World Conference on Environment and Development, namely (a) the pollution prevention principle; (b) the polluter pays principle; and (c) the principle of common, but differentiated responsibility.

In sum, greening the economy in the context of poverty eradication and sustainable development is a process by which environmental concerns are streamlined in all ongoing (greening the brown) and future (growing the green) activities. By so doing, the carbon contents and overall emissions of economic activities decrease and the multiplier effects of these activities, boost investment, stimulate economic growth and improve the creation of jobs. Moreover, improving incomes subsequently contributes to a reduction of poverty.

Figure II. Green economy and achieving social and economic integration



C. REGIONAL PREPARATION PROCESS FOR RIO+20

The process of regional preparations for Rio+20 is led by ESCWA and jointly coordinated within the Technical Secretariat of the League of Arab States and other regional organizations. Also, ESCWA supported several Arab countries in understanding various green economy approaches in key development sectors as shown in annex I. Within that context, ESCWA coordinated and cooperated with Arab and regional entities to organize a number of regional meetings, consultative workshops and capacity-building sessions. For instance, the Regional Workshop on Trade and Environment: Developing the Environmental Goods and Services Sector in the Arab Region for the Transformation into a Green Economy (December, 2010) called for formulating clear definition and better understanding of the goals of the green economy at the regional level. During the workshop, concerns were raised with regard to the emergence of a dual approach namely, that of sustainable development and green economy, and the possibility of the latter approach taking precedence over the former. Consequently, any region should specifically ensure that the green economy strengthens sustainable development rather than replacing it. In addition it was debated whether green economy concepts were to be applied at the macro or micro-levels given that each level involves different policy implications. The disparities between Arab countries in terms of key economic and

social conditions need to be taken into consideration when a harmonized Arab position is built regarding transition to green economy.

The United Nations Environment Programme/Regional Office for West Asia (UNEP/ROWA) in collaboration with ESCWA and the Centre for Environment and Development for the Arab Region and Europe (CEDARE) organized the Third Roundtable on Sustainable Consumption and Production (SCP) in the Arab region (January, 2011). The meeting resulted in raising awareness of the Arab preparation for Rio+20 and green economy concepts, challenges, opportunities in the region with recommendations to establish a nexus between SCP and green economy with the importance of clear identification of priority sectors that can lead the process of transfer to green economy.

The Regional Workshop on Economic Policies was organized by ESCWA in partnership with the League of Arab States, UNEP and the Institut des Finances Basil Fuleihan, Lebanon for supporting the transition to a green economy (July, 2011). The workshop brought together representatives of Arab countries to discuss the required reform of economic policies in order to facilitate the channelling of investments into green areas and stimulate a fair, advantageous and timely transition to a green economy in the region. The workshop aimed to develop concepts of green economy and build consensus regarding its potential in the Arab region, and to highlight the policy mix needed to develop such an economy. It also targeted building the capacity of participants in developing fiscal policies as a means of transforming to a green economy; and provided a regional platform for representatives of ministries of finance and other relevant participants to share experiences, knowledge and lessons learned among themselves and with representatives of member countries involved in preparing for Rio+20. The workshop produced a joint statement that identified regional priorities from an Arab point of view for moving towards a green economy in the region. It stressed the need to prepare economic and technical feasibility studies for environmental projects to be submitted to financial, economic or planning authorities. These studies needed to highlight the financial benefits and costs and advantages expected from the implementation of the proposed project, and whether these benefits/costs were expected within the short or long term. This process could be part of policies that take into account the principles of environmental accounting.

Additionally, ESCWA, in cooperation with the United Nations Economic Commission for Europe (UNECE) Gas Centre, organized the Expert Group Meeting on Promoting Emissions Reductions in the Transport Sector (July, 2011), which called for the adoption of newer technologies and cleaner fuels, especially natural gas, and to implement legislation, specifications and standards necessary to reduce emissions from the transport sector. Equally, the meeting recommended to increase incentives for private investment; to benefit from international financing mechanisms available to implement the necessary infrastructure projects; to build national capacities and awareness programmes on information technology and on setting standards for maintenance and knowledge transfer, and establishing appropriate technologies that were consistent with the specificities of each country; and to support scientific research and development, with the dissemination of successful experiences in the field.

A regional workshop was convened jointly by the International Labour Organization (ILO), United Nations Development Programme (UNDP) and ESCWA on green jobs to introduce and raise awareness on the ILO Green Jobs Programme and to define means of supporting youth employment in green sectors (July, 2011). A case study of Lebanon was introduced for the purpose of assessing green jobs in the energy, construction, agriculture/forestry and waste management sectors. Several policy recommendations were identified during the workshop, including, to conduct follow-up studies addressing the decent work gaps identified to provide detailed analysis on employment in greening the various sectors, to encourage social dialogue, to raise awareness and capacity-building of all actors for promoting the green agenda, and to enforce policies that encourage green economy and promote green jobs. In addition, further financial incentives need to be introduced to encourage green practices. The meeting also highlighted the importance of closing the skills gap for the promotion of green jobs through vocational and technical training.

Also, ESCWA and the Arabic Industrial Development and Mining Organization (AIDMO) in cooperation with the United Nations Industrial Development Organization (UNIDO), the United Nations Environment Programme (UNEP)/ Regional Office for Western Asia (ROWA), the German Agency for International Cooperation (GIZ) and the League of Arab States organized a regional conference on the role of green industries in promoting socio-economic development in the Arab countries. The conference aims at encouraging Arab countries to adopt the concept of green industries and develop common understanding and position regarding priorities to green the industries in the region and to promote a larger scale of application of regional and national renewable energy projects.

The Arab Regional Preparatory Meeting for the United Nations Conference on Sustainable Development (Rio+20), which was held in October 2011, aimed at building consensus among key stakeholders on the objectives and themes to be addressed at Rio+20. In particular, the Meeting discussed progress achieved and gaps in implementing the Sustainable Development Initiative in the Arab Region and the outcomes of major summits on sustainable development; new and emerging challenges affecting progress towards sustainable development; green economy opportunities and challenges facing the Arab region in the context of sustainable development and poverty eradication; and the institutional framework for sustainable development.

The Meeting was attended by representatives of Arab countries from economic, social and environmental backgrounds, as well as those from civil society and major groups in order to formulate recommendations on the objectives and themes of Rio+20 and in view of renewing the political commitment to sustainable development. The Meeting adopted a set of recommendations, which were endorsed by the thirteenth session of the Joint Committee on Environment and Development in the Arab Region (JCEDAR) and submitted to the Council of Arab Ministers Responsible for the Environment (CAMRE) for endorsement (see annex II). The following are the key views of Arab countries with respect to the definition of the green economy and the transition process:

(a) Any concept of the green economy to be agreed upon in the future will not imply that the green economy is an alternative for sustainable development, rather as a tool aimed at achieving it. In addition to the means required to implement green economy, the opportunities and challenges will be assessed, particularly in terms of funding, transfer and localization of appropriate technology, capacity-building and provision of technical support to developing countries;

(b) If an international concept of the green economy is to be adopted, special emphasis will be placed on the principle of gradual transition to a green economy in accordance with the socio-economic characteristics of individual countries and through the adoption of appropriate policies;

(c) The concept of green economy will not be used as the following:

- (i) A standard model applicable to the region as a whole;
- (ii) A pretext to create trade barriers and environmental standards that are difficult to implement;
- (iii) A basis and precondition for providing financial support and aid to recipient countries;
- (iv) A means to restrict the right of developing countries to utilize their natural resources according to their own development priorities;
- (v) A tool to exempt developed countries from honouring their commitments towards developing countries.¹⁴

¹⁴ ESCWA, 2011. Arab Regional Preparatory Meeting for the United Nations Conference on Sustainable Development (Rio+20).

Several organizations at the national, regional and global level have been involved in green economy initiatives and projects. Table 2 includes the main activities of various organizations and related issues and deliverables.

TABLE 2. GREEN ECONOMY ACTIVITIES OF KEY ORGANIZATIONS AT THE NATIONAL, REGIONAL AND GLOBAL LEVELS

Organization	Key issues and subjects	Outputs and publications
UNEP	<ul style="list-style-type: none"> • Introducing green economy concepts and definitions • Green economy as pathways to sustainable development and poverty eradication • Enabling conditions for transition to green economy • Financing the green economy transition • Green economy and MDGs • New green deal • Green jobs initiatives • Towards sustainable consumption and production patterns 	<ul style="list-style-type: none"> • “Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication” (2011) • “Green Economy: A Brief for Policymakers on the Green Economy and MDGs”, which was prepared for the United Nations Summit on MDGs (2010) • “Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World” UNEP/ILO/IOE/ITUC (2008)
ILO	<ul style="list-style-type: none"> • Promoting decent work in a green economy • Concepts of green jobs • The challenge of youth employment and gender gap • Labour market indicators • Key policy issues for employment and decent work in the Arab region • Share of public and private sectors in employment and labour migration 	<ul style="list-style-type: none"> • “Background note on promoting decent work in a green economy” (2011) • “Growth, Employment and Decent Work in the Arab Region: Key Policy Issues” (2009) • “Green Jobs Assessment in Lebanon: A Synthesis Report” (2010)
UNDP	<ul style="list-style-type: none"> • Green job assessment in four sectors in Lebanon (energy, building construction, agriculture and waste management) 	<ul style="list-style-type: none"> • “Green Jobs Assessment in Lebanon: A Synthesis Report” (2010)
UNIDO	<ul style="list-style-type: none"> • Joint UNIDO and UNEP Programme on Resource Efficient and Cleaner Production (RECP) • Green Industry for a sustainable and economically viable future 	<ul style="list-style-type: none"> • “A Greener Footprint for Industry: Opportunities and Challenges of Sustainable Industrial Development” (2010)
United Nations-HABITAT	<ul style="list-style-type: none"> • Conceptualizing the linkage between cities and the green economy • Urban patterns for sustainable development: towards a green economy 	<ul style="list-style-type: none"> • “Urban Patterns for Sustainable Development: Towards a Green Economy” (2011) • “What Does the Green Economy Mean for Sustainable Urban Development?”

TABLE 2 (continued)

Organization	Key issues and subjects	Outputs and publications
Environmental Management Group	<ul style="list-style-type: none"> • IMG report on green economy: green stimulus packages, making green economy work for the poor, supporting innovation and technology, investments for the transition to a green economy 	<ul style="list-style-type: none"> • “Report of the Issue Management Group on a Green Economy: Supporting the Transition to a Green Economy” United Nations Environment Management Group, UNDP, DESA, UNEP, UNESCO, United Nations-HABITAT, United Nations Regional Economic Commissions (2011)
European Commission	<ul style="list-style-type: none"> • Support Green Economy Initiative in Egypt • Transition to Green economy in the European Union 	<ul style="list-style-type: none"> • A project in partnership with UNEP on “Green Economy and Social and Environmental Entrepreneurship Development in Egypt” • “Rio+20: Towards the Green Economy and Better Governance” (2011)

II. DEVELOPMENT CHALLENGES IN THE ARAB REGION

While momentum for transition to a green economy at the global level and in selected countries is advancing rapidly, transitioning to a green economy at the regional level must take into consideration challenges and constraints within a regional context if it is to provide a viable framework in the Arab region for ensuring commitment and support for sustainable development at Rio+20 and beyond.

This report proposes to track development in the region using MDGs, which have the advantage of providing concrete and numerical benchmarks for tackling the multidimensional aspect of development for all countries. Various United Nations sources, particularly from UNDP and ESCWA, are used for data on macroeconomic indicators and policies.

Despite improvements in economic growth and progress made in many Arab countries in achieving MDGs, the Arab region is facing persisting challenges, namely:

- (a) Non-sustained use of natural and energy resources;
- (b) Macroeconomic weaknesses mostly characterized by high unemployment rates, particularly among youth;
- (c) Unequal social progress, especially between men and women and between urban and rural areas;
- (d) Uncontrolled urbanization processes characterized by poor housing conditions, inefficient public transportation and congested cities;
- (e) Poor quality of educational and research systems that fail to respond to the needs of the economy;
- (f) Agricultural, natural resources and environmental problems centred around the issues of food security, water scarcity and desertification;
- (g) An unstable political environment aggravated by regional conflicts and security issues.

The potential benefits of improved regional and subregional integration and a young, entrepreneurial population are two characteristics of the Arab region. If valued appropriately, these two opportunities can help the Arab region to sustain its development process by easing the constraints posed by the challenges listed above. The accelerated regional and subregional integration could increase economic growth by at least two percentage points each year and create millions of jobs.¹⁵

In addition, one country alone cannot have the increasingly demanding financial and human resources needed for building appropriate educational and R and D infrastructure and programmes. Pooling resources at the regional and/or subregional levels and building on the complementarities between countries is the only way around this bottleneck. The entrepreneurial spirit of the mostly young Arab population and its adherence to regional integration are source of optimism for the success of improved cooperation between the countries of the region. This chapter highlights the socio-economic status and related challenges that Arab countries are facing in addressing and achieving sustainable development.

A. MACROECONOMIC POLICIES AND PRIORITIES

Arab countries are diverse. With a total population exceeding 300 million people and a total GDP exceeding US\$2.5 trillion, the region comprises largely populated countries with relatively important GDP,

¹⁵ United Nations and the League of Arab States, 2010, *The Third Arab Report on the Millennium Development Goals 2010 and the Impact of the Global Economic Crises*.

such as, for example, Egypt with 27 per cent of the population and 18 per cent of GDP, and Saudi Arabia with 10 per cent of the population and 25 per cent of GDP; and smaller, much less developed countries, including, for example, Mauritania with 1.1 per cent of the population and 0.3 per cent of GDP, and Djibouti with 0.2 per cent of the population and 0.1 per cent of GDP. In addition to the four categories of Arab countries, as classified by UNDP, this report appends a fifth category in order to account for Iraq and Palestine that are not taken into account in the classification of UNDP.¹⁶ These five categories are as follows:

(a) Diversified economies, with 46 per cent of the total population and 34 per cent of GDP, namely Egypt, Jordan, Lebanon, Morocco, the Syrian Arab Republic and Tunisia;

(b) Mixed oil economies, with 12 per cent of the population and 12 per cent of GDP, namely Algeria and Libya;

(c) Oil economies, with 12 per cent of the population and 45 per cent of GDP, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates;

(d) Primary export economies, with 20 per cent of the population and 5 per cent of GDP, namely Comoros, Djibouti, Mauritania, the Sudan and Yemen;

(e) Economies affected by war and/or occupation, with 9 per cent of the population and 4 per cent of GDP, namely Iraq and Palestine.

Despite these differences, the macroeconomic settings of Arab countries have the following in common:

(a) Low and volatile economic growth;

(b) Inability to create enough jobs, particularly for youth and women. According to UNDP, the average unemployment rate of the region was 13 per cent in 2005 (exceeding 10 per cent for the diversified economies and nearing 19 per cent for the primary export economies);

(c) Budgets that are dominated by social programmes, particularly those devoted to education (6 per cent of GDP compared to 4 per cent in East Asia and 4 per cent in Latin America) and generally non-targeted food subsidies;¹⁷

(d) Balance of payments dominated by remittances of migrants and exports of oil and/or natural resources, with value-added industries and services representing a low share of total exports;

(e) Low levels of intraregional trade;¹⁸

(f) Significant contribution of agriculture to GDP in many countries, with more than 30 per cent in the Sudan; 15 to 20 per cent in Egypt, Morocco and the Syrian Arab Republic; and 10 to 15 per cent in

¹⁶ UNDP, 2009, *Development Challenges for the Arab Region*. Data for Iraq and Palestine are from World Bank, *World Development Indicators* and the Central Intelligence Agency (CIA), *Iraq, The World Factbook*, available at www.cia.gov/library/publications/the-world-factbook/geos/iz.html.

¹⁷ World Bank, 2008, *The Road Not Traveled: Education Reform in the Middle East and North Africa*.

¹⁸ Intraregional trade represented less than 10 per cent of total Arab trade compared to 24 per cent for the ASEAN Southeast Asian Nations countries, 14 per cent for MERCOSUR Latin American countries and 12 per cent for UEMOA West African countries. See United Nations Conference on Trade and Development (UNCTAD), 2007, *World Investment Report: Transnational Corporations, Extractive Industries and Development*.

Mauritania and Tunisia. In general, Arab countries have been adopting macroeconomic policies that have managed to limit budget deficits and control inflation.

In general, Arab countries have been adopting macroeconomic policies that have managed to limit budget deficits and control inflation. However, these policies are under the continuous pressure of costly, non-targeted social programmes (especially those related to food subsidies). At the same time, the low level of intraregional integration in the Arab region has prevented these countries from taking full advantage of the benefits of regional integration in terms of economic growth and job creation.

So far, the financial crisis had little impact on the region's levels of economic growth. The impact on growth has been limited because, with the notable exception of GCC countries, Arab banks have not been exposed to the same assets that have created the crisis. Moreover, and this is particularly significant for countries with diversified economies, there are no indications of significant declines in exports. Finally, the drop in oil revenues was compensated by the reserves accumulated during the boom years.

There is, however, concern about the impact of the crisis on economic growth in the medium term. If it persists, the drop in volumes of development aid for LDCs and in workers' remittances and FDI in all countries could lower general levels of investments which in turn would negatively affect economic growth. Inflationary pressures can aggravate this tendency given that most countries have eased their monetary policies in order to keep financing social programmes. As indicated below, this has become more worrisome since the beginning of 2011, with attempts to ease social tensions by increasing food subsidies and Government jobs. While targeted social programmes are more complicated to design, they are absolutely vital if the region is to combine economic growth and stability with social protection.

LDCs in the Arab region have been hit hardest by the fall in development aid and workers' remittances. With increasing constraints on their budgetary instruments, social programmes have been either abandoned or downgraded, and progress in achieving sustainable development is threatened in these countries.

B. EMPLOYMENT AND YOUTH DEVELOPMENT

Full employment is one the most important challenges facing the Arab region. The unemployment average is around 13 per cent and the region needs to create some 50 million jobs by 2020, mostly for young people, in order to reach full employment (see table 3 and figures III and IV).

Young people aged 15 to 24 are the largest demographic group in the region, with rapidly growing rates. This growth could provide good opportunities for development and could also constitute major challenges at the social, economic and political fronts unless there are policies that help to make the best use of the youth and create opportunities for education and work.

Youth labour force participation rates have declined as observed on long-term trends over the period 1998-2008. A report by ILO in 2010 indicated that the youth labour force participation decreased globally from 54.7 per cent to 50.8 per cent during this 10 year period. More than 20 per cent of the youth labour force in the Middle East and North Africa in 2008 were not able to find jobs.

Unemployment affects mostly women and youth in the Arab region. Some 30 per cent of Arab youth are unemployed compared to the global average of 15 per cent.¹⁹ With respect to labour market indicators, specifically youth unemployment rates and labour force participation rates, the gender gaps are significantly higher in the Arab region compared with the global average as well as means in other regions. The

¹⁹ Arab Labour Organization Statistics, http://alolabor.org/final/index.php?option=com_content&view=category&layout=blog&id=132&Itemid=85&lang=ar.

employment situation facing young women is challenging and could worsen if economic crises add more burdens to national and global labour markets.

TABLE 3. UNEMPLOYMENT AND PROJECTED NUMBERS OF NEW JOBS REQUIRED IN SELECTED ARAB COUNTRIES

Category	Labour force, 2005 (millions)	Unemployment rate 2005 (percentage)	Employment, 2005 (millions)	New jobs, 2010 (millions)	New jobs, 2015 (millions)	New jobs, 2020 (millions)
Diversified economies	48.3	11.82	42.59	6.55	14.16	21.78
Mixed oil economies	15.5	15.61	13.08	2.26	4.92	7.56
Oil economies	13.7	4.53	13.08	3.37	7.73	12.08
Primary export economies	22.8	18.68	18.54	2.85	6.17	9.49
Total	100.3	12.97	87.29	15.03	32.98	50.91

Source: UNDP, *Human Development Report* (2009).

Note: Diversified economies comprise Egypt, Jordan, Lebanon, Morocco, the Syrian Arab Republic and Tunisia; mixed oil economies comprise Algeria and Libya; oil economies comprise Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates; and primary export economies comprise Comoros, Djibouti, Mauritania, the Sudan and Yemen.

Figure III. Share of Arab youth to total unemployment

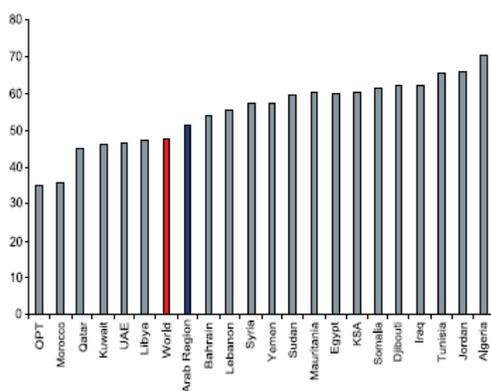
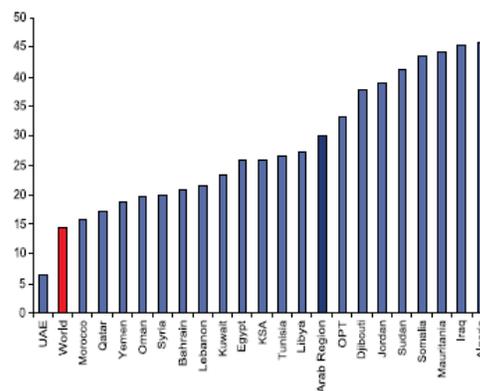


Figure IV. Unemployment rate among Arab youth



Source: Arab Labour Organization, “Statistical Bulletins” (in Arabic), available at <http://alolabor.org/>.

There have been many initiatives and lessons learned in the area of youth development. Most of these initiatives, however, lack planning and are related to short-term projects that are geographically disintegrated. These projects are not sustainable and cannot accommodate the increasing needs by youth and international pressures owing to globalization.²⁰

C. SOCIAL PROGRESS AND POVERTY ERADICATION

Table 4 indicates the Arab region’s strengths and weaknesses in social progress as measured by achievements in MDGs. Four main observations can be drawn, namely:

²⁰ ESCWA, *Youth Development in the ESCWA Region: Statistical Profiles, National Strategies and Success Stories* (E/ESCWA/SDD/2010/Booklet.1).

(a) There is an overall progress in enrolment in education despite a rapidly increasing population in the region;

(b) The state of social progress in general is heterogeneous within the region. Specifically, GCC countries are likely to achieve MDG targets, middle-income countries have made mixed progress, and the region's LDCs are unlikely to achieve the targets;

(c) There are concerns across the region on achieving those MDGs related to ending poverty and hunger, achieving gender equality and improving maternal health;

(d) The lack of peace and security is seriously affecting lags in achieving MDGs in Iraq, Palestine, Somalia and the Sudan.

The slow social progress in the Arab region is aggravated by several factors, including, chiefly the following:

(a) Costly social programmes are seldom targeted to the poor, particularly with regard to food subsidies. The widely prevalent generalized food subsidy programmes are costly and negatively affect agricultural, thereby contributing to poverty in rural areas;²¹

(b) The effects of climate change, aggravated by the recent food and financial crises are likely to slow social progress. Climate change will pose additional burdens on productive activities and render more difficult such daily tasks as water collection in poor areas. Floods threaten infrastructure, including schools and health centres, and disasters of all sorts increase displacements and migration;

(c) While Arab countries have invested heavily in education since the 1960s, the region is characterized by a low use of its accumulated human capital. The link between human capital accumulation, employment, economic growth and poverty reduction in the region is weak.²² In the majority of Arab countries, expansion has taken place without a corresponding increase in new job opportunities;

(d) There is a lack of integrated social policies despite a high level of interdependence between social indicators. Specifically, Iraq, Lebanon, Oman and Palestine have seen a decline in performance with regard to educational attainment. This is worrisome given that this indicator interacts actively with other MDGs related to health, extreme poverty and hunger and gender equality. At the same time, improving population health is vital for the successful attainment of all other MDGs. Similarly, gender parity is central to the achievement of many MDGs. It cannot be dissociated from efforts aimed to reduce poverty, improve maternal and child nutrition and health, or prevent HIV/AIDS.

There is some evidence that the Arab region is on the right track with respect to halving the proportion of people living below US\$1.25 a day between 1990 and 2015. While the Arab region has been successful in reducing the proportion of the poorest population, according to MDG definitions, using a higher poverty line actually indicates that the region's poverty rate has increased significantly from 4 to 17 per cent.²³ At the subregional level, there have been wide changes in poverty reduction. The Mashreq region witnessed a small reduction rate of 0.7 per cent annually while the Arab LDCs were more successful as poverty dropped at an average annual rate of 1.5 per cent.

²¹ International Food Policy Research Institute, 1988. Food Subsidies in Developing Countries: costs, benefits and policy options.

²² World Bank, 2008. The Road not Traveled, Education Reform in the Middle East and North Africa.

²³ United Nations and the League of Arab States, op. cit.

At the subnational level, poverty in the Arab region is highly concentrated in rural areas, which account for about 41 per cent of the total population. The majority of this rural population (94 per cent) is distributed among income groups that are characterized as lower-middle. The highest rural-urban difference is estimated for Tunisia (4.9 per cent), followed by Morocco (3.0 per cent), Egypt (2.9 per cent) and Yemen (1.9 per cent).²⁴

The achievement of poverty reduction in the Arab region is fundamentally constrained by such key challenges as unemployment and shortage of decent work, given the above-mentioned high unemployment rates, particularly among Arab youth, compared to other regions and to the world average. Moreover, the region is unlikely to achieve progress in halving hunger owing to the fallout from recent food and financial crises. In addition, LDCs are still facing development challenges in terms of rapidly increasing populations, environmental degradation and depletion of natural resources, which all lead to increasing poverty and, therefore, to adverse social and political conditions in these countries.²⁵

D. URBANIZATION

Rapid population growth, migration from rural to urban areas and subsidies are the key factors that have contributed to the high demand on natural resources in the Arab region. The increased reliance on natural resources due to economic activities and development in Arab countries have led to economic problems and fluctuations in world prices, with repercussions mainly on growth, employment and economic stability. This is in addition to deteriorating environmental conditions.

Urbanization has often been synonymous with development. All developed and emerging economies have large, rapidly growing cities and their rural population have dropped rapidly. However, this phenomenon always goes along with significantly negative environmental consequences. As in many other parts of the world, urbanization in the Arab region is fuelled by high fertility rates and the concentration of economic activity in urban areas. Consequently, the urban population is growing at a higher rate than the national population, with nearly half the population living in towns and cities. In several Arab countries, the spectacular growth of major cities is occurring as a rapid development of hitherto small and medium-sized towns.

Urbanization in the region is further characterized by a concentration in one or a few cities, generally in coastal areas. For example, the Governorate of Cairo, with a population of almost 7 million living in an area of less than 500 square kilometres, represents the largest city in Africa and is ranked as one of the most densely populated cities in the world.²⁶ In Morocco, the Atlantic-front cities of Casablanca, Rabat and Kenitra groups almost half of the urban population. In Algeria, more than 90 per cent of the inhabitants live in one-sixth of the national territory. Figure V shows the percentage of the urban population in Arab countries in 2010.

High differences in services exist between GCC countries and other countries in the region. For example, while the majority of people in the GCC subregion have adequate shelter and access to good quality urban services as well as health and education, almost all other countries suffer from significant gaps and inequality among their different population groups. However, urbanization is generally accompanied by: inadequacies between the supply and demand of housing, large traffic congestions and parking problems, problems in municipal refuse collection and lack of green spaces. All this leads to environmental deterioration taking the form of high consumption levels of water and other non-renewable resources, elevated pollution rates as well as threats to cultural heritage sites, which puts at risk both the archaeological sites and the traditional architecture of cities. Damages include negative effects on the urban atmosphere and

²⁴ UNDP, 2009, *Arab Human Development Report*.

²⁵ United Nations and the League of Arab States, *op. cit.*

²⁶ Central Agency for Public Mobilization and Statistics in Egypt, 2010, *Population Estimates by Sex and Governorate*.

the reduction of urban water supply. They provoke higher health risks and safety hazards, including a higher incidence of infectious diseases lower worker productivity. Moreover, they increase the cost of basic services and raise inequality in access to these services. In general, cities are not prepared for increased variations in weather conditions caused by global warming, which increases the risks of flooding and health issues associated with heat waves.²⁷

TABLE 4. SOCIAL PROGRESS MEASURED BY ACHIEVEMENTS IN MDGS

Indicator	Strengths	Weaknesses
Ending poverty and hunger	<ul style="list-style-type: none"> • Arab countries on track in halving the proportion of people living below US\$1.25/day • Indicators of undernourishment and child nutrition place the region at a relatively advantageous position when compared to other developing regions 	<ul style="list-style-type: none"> • The food crisis has undermined the progress of LDCs since 2006 • Serious concerns about the achievement of full and decent employment, particularly for youth and women • The region lags behind in the target of halving hunger and there is a higher percentage of the population living below national poverty lines • Concerns regarding the impact of rising food prices, droughts and climate change. In 2008, an additional 2.6 million people required emergency food relief in Somalia. Rising food prices are expected to have pushed a significant proportion of the population under the food poverty line in Yemen. About 1.2 million residents in South Sudan alone will be vulnerable to food insecurity, with a corresponding total food requirement of 76,000 tonnes. The issue of food security is magnified by the daily struggles for survival under military occupation and siege in the Gaza Strip and the West Bank
Universal primary education	<ul style="list-style-type: none"> • Improvement in net enrolment ratios (NER), gender parity in primary schooling and the literacy rate of young adults aged 15-24 years • Total enrolment in the region was estimated at 41 million in 2007, showing an increase of 5.1 million since 1999 	<ul style="list-style-type: none"> • Iraq, Lebanon, Oman and Palestine have seen a decline in performance with regard to educational attainment • Enrolment, school completion, out-of-school children and the issue of marginalization in education continue to present significant challenges to the achievement of universal primary education, particularly among LDCs and countries in or emerging from conflict. Iraq, Palestine, the Sudan and Yemen carry the largest shares of out-of-school population for the region, with over 25 per cent in Yemen and Iraq alone in 2007
Gender equality and women empowerment	<ul style="list-style-type: none"> • From 1999 to 2007, gender parity in net enrolment ratios (NER) for primary education increased marginally from 0.87 to 0.90 	<ul style="list-style-type: none"> • A total of 13 out of the 22 countries in the Arab region have not achieved gender parity in primary education

²⁷ United Nations Programme on Human Settlements (UN-HABITAT), Kuwait Office. *Status of Urban Development in the Arab Cities, 2010/2011* (In Arabic).

TABLE 4 (continued)

Indicator	Strengths	Weaknesses
	<ul style="list-style-type: none"> • Recent surge in efforts by Governments, NGOs and civil society organizations to tackle all forms of discrimination against women, and to invest in women's issues on a large scale • The Arab region has witnessed an improvement albeit very modest in women's political representation, with the percentage of women in national parliamentary seats rising from 8 per cent in 2006 to 10 per cent in 2010 • Adoption of special measures, such as the quota system to accelerate women's political representation in Egypt, Jordan, Tunisia, the Sudan, Iraq, Palestine, Morocco and Mauritania 	<ul style="list-style-type: none"> • In 2006, more than 60 per cent of children who were not enrolled in primary schools were girls, and 53 per cent of these were expected never to enroll, compared to 39 per cent of out-of-school boys • Women's economic and political participation remains particularly low. Representation of women in national parliaments was at 10 per cent as of February 2010, the lowest rate in the world and still far from the 30 per cent that was recommended in the Beijing Platform for Action • Women's labour force participation in the Arab region, at 33 per cent in 2008, was the lowest in the world. Gains achieved by women in education have not been translated into greater economic participation
Child health	<ul style="list-style-type: none"> • Under-five mortality has been declining steadily in the Arab region from 83 per 1,000 live births in 1990 to 52 per 1,000 live births in 2008, representing a reduction of 37 per cent in 18 years • The Mashreq, Maghreb and GCC countries are all on track to achieve the under-five mortality MDG target • Important successes in increased immunization rates 	<ul style="list-style-type: none"> • It is unlikely that the Arab region as a whole will achieve this target by 2015 • In the Arab LDCs, more than one in ten children dies before reaching their fifth birthday. LDCs are off-track to achieve the under-five mortality MDG target • Universal immunization coverage will not be achieved by 2015 without addressing problems of accessibility to vaccines, low health facility coverage, suboptimal delivery strategies and unavailability of services in conflict areas and for mobile and displaced populations
Maternal health	<ul style="list-style-type: none"> • Both the Maghreb and the Mashreq countries have made significant achievements in reducing maternal mortality, although it may not be sufficient to achieve the three-quarter reduction required to meet the Goal by 2015 • All countries except the Sudan and Somalia have made significant improvements in skilled birth attendance. Countries with significant progress towards achieving reduction in maternal mortality also have a higher proportion of births attended by skilled personnel 	<ul style="list-style-type: none"> • There are too many variations in the maternal mortality level among countries of the region, ranging from levels below 10 per 100,000 live births in some GCC countries to around 1,600 per 100,000 in Somalia • There is slow progress largely attributed to persistent gender inequalities and unhelpful social practices • Birth rates remain high in most countries of the region compared with more developed nations, leading to the conclusion that, on average, women of the Arab region are more exposed to maternal health risks owing to high pregnancy frequencies

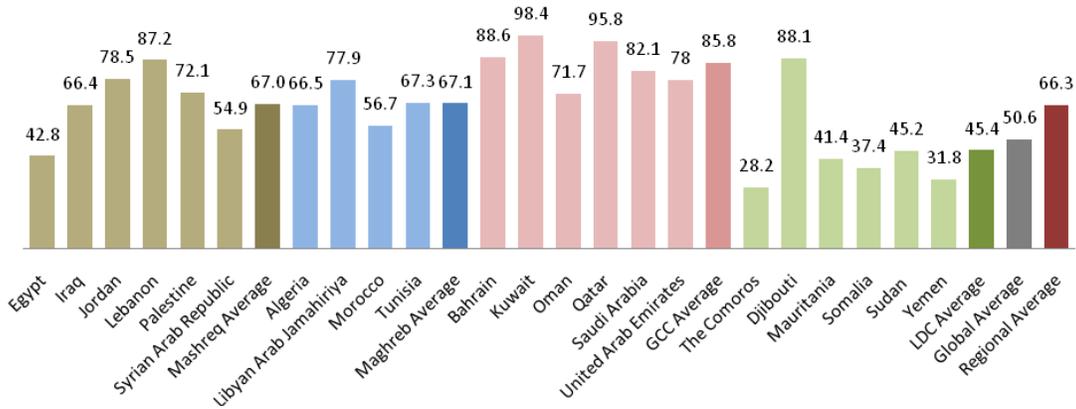
TABLE 4 (continued)

Indicator	Strengths	Weaknesses
	<ul style="list-style-type: none"> • Algeria, Bahrain, Lebanon, Libya, Oman, Palestine, Qatar, Saudi Arabia, the Syrian Arab Republic, Tunisia and the United Arab Emirates have achieved more than 90 per cent coverage with skilled birth attendants • All countries except the Sudan have made progress in increasing contraceptive prevalence rates • The GCC and the Maghreb countries have successfully lowered adolescent fertility • Overall progress in antenatal coverage between the 1990s and 2000s • Egypt, Morocco and the Syrian Arab Republic show lower levels of unmet need for family planning at 9, 10 and 11 per cent, respectively. Over the past decade, these countries have faced a leveling of contraceptive prevalence rates 	<ul style="list-style-type: none"> • There has been a marked regression in Palestine after the second intifada stemming from the closures of and restricted access to maternity hospitals, leaving women with no safe option for childbirth • In parts of the Sudan and Somalia women are afraid to seek health-care services. They often have to deliver at home in the absence of health-care providers who are often unable to travel to reach women in need. Given that ambulances in Somalia are often targeted, women tend to abstain from using them. In the conflict-stricken part of Yemen, access by pregnant women to health personnel is also hindered. In Iraq, the previous international sanctions regime had reduced the resources invested in the health sector and undermined the general health of the population, particularly the most vulnerable; the wars destroyed much of the health infrastructure and health-care services, partly resulting from the depletion of the pool of qualified personnel • The Mashreq and the LDCs are still experiencing early childbearing and exposure to risks • Insufficient data on family planning in many countries
Combating HIV/AIDS, malaria and other diseases	<ul style="list-style-type: none"> • Relatively low prevalence • The period between 1990 and 2007 witnessed a decline of 24 per cent in incidence and a reduction of 37 per cent in prevalence of tuberculosis 	<ul style="list-style-type: none"> • The epidemic is on the rise; risks and vulnerability are at stake • The majority of reported cases among high-risk populations, such as commercial sex workers, involve unprotected sexual contact between young adults • There is increasing evidence of epidemics among injecting drug users and their sexual partners • Malaria is still highly endemic in LDCs, especially in north Sudan (7,167 per 100,000), Comoros (8,693 per 100,000) and Mauritania (6,140 per 100,000) • Tuberculosis remains a significant public health problem and probably the leading cause of communicable disease deaths in adults in the Arab region. Challenges lie mainly in LDCs where incidence rates have increased in recent years

Source: United Nations and the League of Arab States, "The Third Arab Report on the Millennium Development Goals 2010 and the Impact of the Global Economic Crises" (2010).

There is a need to formulate green urban policies by developing integrated and coherent urban strategies that can transform the current infrastructures towards greener zones. Linkages of urban strategies to other sector green advances, including water, energy, transportation and waste management will be the major challenge the urban planners need to face in order to green the housing sector. Currently, An Arab green building code is being developed that will include specifications for water use and rainfall harvesting, energy efficiency, cooling systems, reuse and recycling of resources, air quality.²⁸

Figure V. Urban populations in Arab countries, 2010
(Percentages)



Source: United Nations Programme on Human Settlements (HABITAT), *Status of Urban Development in the Arab Cities, 2010-2011*.

E. ENERGY AND OIL SECTOR

The Arab region has tremendous oil and natural gas reserves, with some 58 per cent and 30 per cent of the world’s proven reserves in crude oil and natural gas, respectively.²⁹ The Arab economies are highly dependent on oil and gas as the primary source of energy. In 2008, about 53.6 per cent of electric energy generated was based on oil, and 43.9 per cent was based on gas; while other sources, such as hydropower, coal and renewable resources represented about 2 per cent. At the global level, electricity generation from oil and gas accounts for 26.7 per cent of the global electricity generated, with coal at 40.8 per cent, nuclear at 13.5 per cent, hydropower at 16.2 per cent, and other renewable energy sources contributing to 2.8 per cent.³⁰

The total emissions from fuel combustion in the Arab region in 2008 was 1,310.2 MtCO₂ (metric tonne carbon dioxide equivalent), constituting about 4 per cent of global emissions, which is comparable to the population and area of the Arab region.³¹ The carbon dioxide emissions come not only from the electric power sector, but also from the transport, industrial and other sectors.

Regional cooperation policies in the energy field were limited until the mid-1990s when the interconnection of electric grids was initiated between several Arab countries. Three interconnections were made, mainly the eight countries interconnection in the Levant area with a link to Turkey and possible extension further into Europe, the Gulf network interconnection, and the northeast African interconnection.

²⁸ League of Arab States, 2011, *Arab Green Building Code*.

²⁹ Organization of Arab Petroleum Exporting Countries (OAPEC), *Annual Statistical Report 2008*.

³⁰ International Energy Agency (IEA), 2010, *CO₂ Emissions from Fuel Combustion 2010 – Highlights*.

³¹ Ibid.

In some Arab countries, a large percentage of the population lives in rural communities, including, for example 71 per cent in Yemen, 59 per cent in the Sudan, 57 per cent in Egypt and 46 per cent in the Syrian Arab Republic.³² Moreover, 70 per cent of the population in the Sudan and 50 per cent in Yemen are not supplied with electricity, mainly in the rural areas, owing to isolations of the remote communities and high costs of long transmission lines needed to reach such communities.³³ The energy needs for such isolated communities are met largely with firewood and charcoal. Uncontrolled use of such biomass exacerbates deforestation and land degradation with a direct impact on food security, thereby accelerating the cycle of extreme poverty. Moreover, deforestation has negative impacts on climate change. In Palestine, on the other hand, energy supply and services are frequently hindered by the Israeli embargo and prevailing unstable security situation, thereby rendering energy security and access to energy services from available local renewable resources one of the most preoccupying issues.

The Global Wind Energy Council (GWEC) estimates that for every one megawatt of new wind capacity 15 man-years in job opportunities would be created covering activities from manufacturing to commissioning and 0.33 jobs in regular operations and maintenance activities.³⁴ This would result in about 535,000 to 2.2 million new jobs worldwide by 2020, depending on the different scenarios for wind energy market evolution.³⁵ In the field of solar energy, it is estimated that for every new megawatt 10 full-time manufacturing, contracting, installation and commissioning jobs could become available, and 0.3 annual jobs in operation and maintenance activities.³⁶

Among the challenges facing this sector to go green is the vulnerability to international oil prices and carbon price uncertainty. It is evident that the required amount of finance for the renewable energy is small compared to the financial bails-out following the crisis of 2008.³⁷ A variety of renewable energy, including biomass and biofuels, needs to be evaluated in order to address the impacts on employment, poverty eradication, energy security and economic gains at the stage following the installation of the renewable energy facilities and the production phases. This can be done through cost/benefit analyses to balance out various aspects associated with the introduced projects. Based on such analyses, appropriate financing schemes and investments could be designed to lower the high upfront capital costs of the renewable energy technologies. The increasing reliance on the region's vast and various renewable resources, especially solar, wind, hydro and biomass is expected to diminish the adverse environmental impacts that oil and fossil fuels have on the achievement of sustainable development.

F. NATURAL RESOURCES AND ENVIRONMENTAL ISSUES

1. *Water scarcity and integrated water resources management*

The Arab region uses more than 80 per cent of its water resources in agriculture.³⁸ Countries of the region are either in arid or hyper-arid zones, depend on seasonal rainfall, have very few rivers – some of which carry water from other countries, which increases risks on peace and security of the region – and rely on fragile and sometimes non-renewable aquifers. Currently, the region is facing numerous pressures and challenges that threaten the sustainability of scarce water resources. This scarcity of water resources in

³² Department of Economic and Social Affairs (DESA), Population Division, *World Urbanization Prospects: The 2007 Revision*, available at www.un.org/esa/population/publications/wup2007/2007wup.htm.

³³ Arab Union of Electricity, Statistical Bulletin, 2008 and 2009.

³⁴ Global Wind Energy Council (GWEC), 2008, *Global Wind Energy Outlook 2008*.

³⁵ Ibid.

³⁶ European Solar Thermal Electricity Association (ESTELA), 2008, *Solar Thermal Electricity Report*.

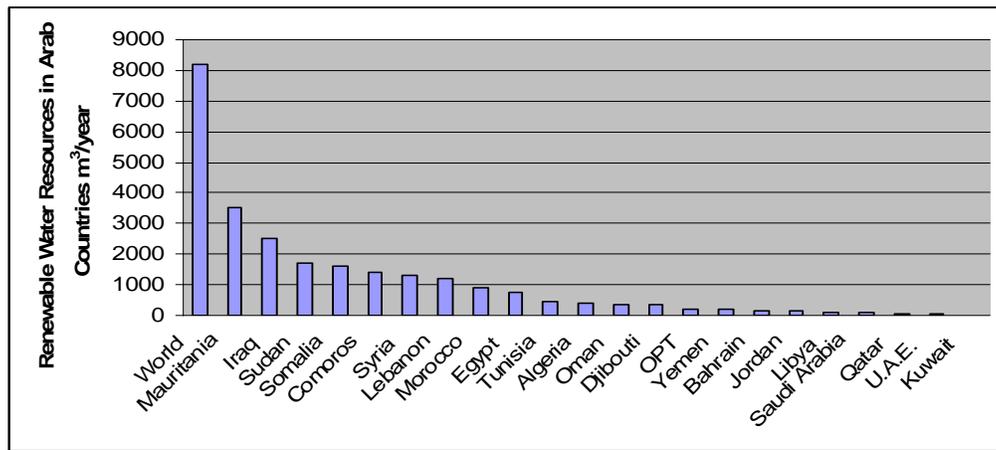
³⁷ UNEP, 2008, *Meeting Report of the Launch Meeting of the Green Economy Initiative: Towards a Green Economy (Geneva, 1-2 December, 2008)*.

³⁸ UNDP, 2009, *Arab Human Development Report*.

addition to the arid and semi-arid climate that characterizes the region would lead to increase of rates of consumption, evaporation and losses of water resources used by various sectors. For instance, it is estimated that about 30-50 per cent of drinking water is lost from water distribution networks due to aging and poor conditions.³⁹

The amount of renewable water resources available in the Arab region was an estimated 300 billion cubic metres (m³) in 2008, while total water demand reached 354 billion m³ in the same year. Total water demand is projected to climb to 378 billion m³ in 2030; and this water deficit and imbalance between supply and demand is projected to grow steadily in the future. The per capita share of freshwater resources dropped significantly when compared with international standards, with an estimated global average of per capita availability of water at some 8210 m³/year in 2007. For example, in Mauritania the water share per person in 2007 was 3,546 m³/year, while in Kuwait it was estimated as low as 6.9 m³/year (see figure VI). In the *Human Development Report* of 2009, UNDP estimated that there were about 45 million people in the Arab region with no access to clean water sources. Currently, water demand exceeds the actual renewable water resources available in the Arab region by more than 40 per cent. The GCC countries depend increasingly on seawater desalination (98 per cent in Qatar and 40 per cent in Saudi Arabia), with negative incidences on sea resources.

Figure VI. Renewable water resources in Arab countries, 2008



Source: FAO, AQUASTAT (2008).

Water scarcity, trade-offs between sectors (for example industry versus agriculture) and water pollution have incited policymakers to adopt holistic water management policies and regulations aimed to promote the management of the demand for water through, for example, incentives to encourage farmers to adopt crops with low water consumption; and to establish a more efficient supply with water conservation and more efficient irrigation techniques. Nonetheless, there is no single pattern in the results of integrated water resources management in the region. While success stories are widespread in many countries, others are lagging. Even in countries where success is reported, inefficient water use and supply patterns persist, particularly in areas where small, traditional farming practices are concentrated.

Water scarcity is expected to worsen in the region in the “business as usual” scenario. Per capita water availability is expected to decrease by at least 50 per cent by 2050 and perhaps even lower if the predictions of decreasing rainfall averages resulting from climate change are confirmed.⁴⁰

³⁹ ESCWA, *Sustainable Water Supply and Sanitation for All: Regional Assessment Report on the Status and Achievements of ESCWA Member Countries Towards Improved Water Supply and Sanitation* (E/ESCWA/SDPD/2009/1).

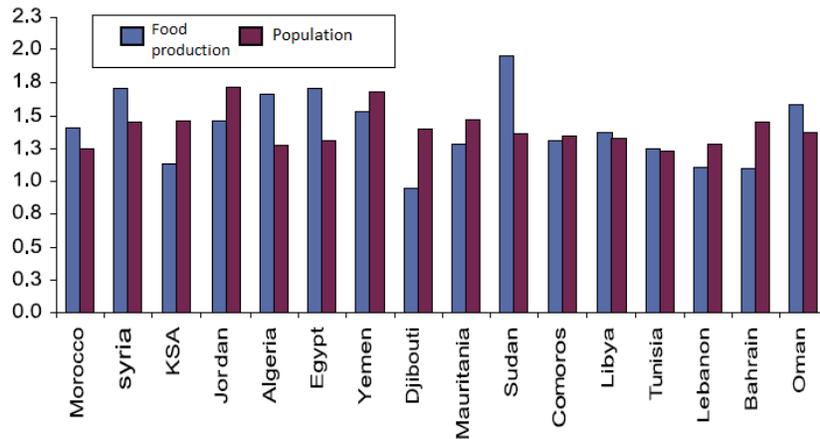
⁴⁰ World Bank, 2007, *Making the Most of Scarcity: Accountability for Better Water Management Results in the Middle East and North Africa*.

The absence of waste management and changing lifestyles has led to increasing waste, especially those that contain large proportions of organic material. In addition, the rates of disposal of hazardous waste from industry have grown in the Arab region, particularly oil, minerals and chemicals. Consequently, it has become necessary to promote the concept of sustainable patterns of production and consumption of natural resources, especially water, and to encourage the use of products that contribute to the protection and conservation of the scarce water resources in the region.

2. Agricultural productivity, food security and desertification

Many countries in the Arab region, particularly those in the Mediterranean Basin, have longstanding traditions of agricultural activities providing food to local as well as foreign markets. However, demographic growth and low agricultural productivity, aggravated by inefficient policies, desertification and climate change, have continuously eroded the position of agriculture in the economies of those countries. The contribution of the agricultural sector to GDP in the Arab region decreased from 8.3 per cent to 5.4 per cent over the period 2000-2008, and varies widely from 1 per cent in Qatar to 29.3 per cent in the Sudan.⁴¹ Even if the demographic pressure has been comparatively easing since the 1990s, the population continues to grow faster than food production in most countries (see figure VII).

Figure VII. Food production and population ratios, 1990-2004



Source: UNDP, *Human Development Report* (2009).

In addition, while agricultural productivity has increased since the 1990s in such middle-income countries as Algeria, Egypt, Morocco, Syrian Arab Republic and Tunisia, data by the World Bank show that productivity per worker remained stagnant in most Arab LDCs, namely, Comoros, Djibouti and Yemen; and declined significantly in Mauritania.

With the exception of LDCs, the irrigation potential of most countries is at near or over capacity, thereby leaving untapped the potential stemming from any unused agricultural land. Rain-fed agriculture is still widely predominant and is therefore becoming increasingly affected by droughts and/or lower than average rainfall (see table 5).

The poor are severely affected by the lagging agricultural sector. Arab countries are more self sufficient in the food commodities that are more likely to be consumed by the wealthier population, including meat, fish and vegetables, than in those commodities that are more likely to be consumed by the poor, such as cereals, fats and sugar. Consequently, the poor are more vulnerable to fluctuations and shocks

⁴¹ UNDP, 2009, *Development Challenges for the Arab Region: Food Security and Agriculture*.

in international food prices. Self sufficiency ratios are stagnating, with no apparent prospects for improvement of this situation (see table 6). Food subsidies in the Arab region have mostly been seen as biased against farmers and in favour of (urban) consumers. The downward pressure on agricultural prices leads to low agricultural revenues, which increases migration from rural to urban areas. For all these reasons, poverty in the Arab region is either concentrated in rural areas or is of a rural origin.

Desertification is affecting agriculture and is aggravated by unsustainable agricultural practices. More than 86 per cent of the region is defined as desert. Of the remaining 14 per cent, a very modest 4.2 per cent (representing some 75 million hectares) is being used for farming and grazing. UNEP estimates that 20 per cent of this area is threatened by desertification and, each year, 2 per cent is lost owing to salinization and 1 per cent is lost as a result of urban expansion.⁴²

TABLE 5. AGRICULTURE AND WATER USE INDICATORS FOR SELECTED COUNTRIES
IN THE ARAB REGION

Country	Total agricultural land (percentage of total land)	Total cultivated land (percentage of total agricultural land)	Total irrigated land (percentage of total cultivated land)	Average rain-fed area (percentage of total cultivated land)	Area equipped for irrigation (percentage of irrigation potential)	Rainfall index
Algeria	17	21	7	87	111	257
Bahrain	14	60	67	33	96	N/A
Egypt	3	100	100	0	100	107
Jordan	11	26	19	70	92	179
Kuwait	9	12	72	0	27	36
Lebanon	38	85	33	67	51	656
Libya	9	14	22	0	117	131
Mauritania	39	1	10	20	19	199
Morocco	68	31	15	80	89	340
Oman	3	7	90	10	N/A	29
Qatar	6	30	62	0	N/A	N/A
Saudi Arabia	81	2	43	0	N/A	151
The Sudan	57	13	11	85	67	741
Syrian Arab Republic	75	40	25	40	115	366
Tunisia	63	50	8	80	139	355
Yemen	34	9	33	45	N/A	231

Source: FAO database.

Notes: Percentages exceeding 100 per cent indicate that the irrigation infrastructure can potentially cover more than the area in consideration.

The rainfall index, which was developed by the Food and Agriculture Organization of the United Nations (FAO), represents the quality of the crop growing season in millimeters per year.

The food security crisis occurred largely as a result of higher food prices in global markets, the sharp increase in energy prices, and change of land uses from productive agricultural lands towards the production of biofuels, thereby leading to lower agricultural productivity of basic crops. In the Arab region, countries were particularly affected by the crisis of global food security given their high dependence on food imports. Specifically, total food import accounts for 5 to 10 per cent of total imports in many Arab countries, including wheat, which represents a basic strategic crop in the region.

⁴² UNEP, 2010, *Environment Outlook for the Arab Region: Environment for Development and Human Well-being*.

TABLE 6. SELF SUFFICIENCY RATIOS FOR FOOD COMMODITIES
(Percentages)

	Mashreq	Maghreb	GCC	LDCs	Total
Cereals (1982-1993)	52	48	34	60	51
Cereals (1993-2004)	59	40	29	62	52
Dairy products (1982-1993)	60	49	18	73	56
Dairy products (1993-2004)	71	57	29	80	65
Fats and oils (1982-1993)	28	32	1	61	33
Fats and oils (1993-2004)	45	21	62	54	43
Meats (1982-1993)	81	94	44	86	82
Meats (1993-2004)	80	97	55	91	84
Sugar (1982-1993)	42	26	0	59	37
Sugar (1993-2004)	47	19	0	64	39
Vegetables (1982-1993)	101	102	69	81	94
Vegetables (1993-2004)	98	103	74	97	96
Pulses (1982-1993)	76	70	0	62	64
Pulses (1993-2004)	80	54	1	76	63
Fish (1982-1993)	74	112	61	93	87
Fish (1993-2004)	70	110	64	112	89

Source: UNDP, *Human Development Report* (2009).

Approximately 80 per cent of the region's agricultural products are produced by six Arab countries, namely Egypt, Mauritania, Morocco, the Sudan, the Syrian Arab Republic and Yemen. The GCC countries import almost 100 per cent of their needs in basic food, while their economies rely largely on the cash surpluses provided by the oil sector. On the other hand, the non-oil exporting countries are facing huge financial challenges, as well as security problems owing to high prices, thereby aggravating poverty and food shortages at the national level. The countries and territories that are most vulnerable to fluctuations in food prices are those with relatively high levels of poverty, including Iraq, Palestine and Yemen, and those that rely on imported food and fuel in large quantities, such as Jordan and Lebanon.⁴³

Food security is seen as a political and economic issue and it largely affects policy settings in various sectors. In the recent years, the region's imports of cereals (mainly wheat, maize and barley) have increased as the deficit value of main food commodities increased by about 8 per cent annually over the period 2000-2008, representing a total of US\$12 billion.⁴⁴ Agricultural productivity is adversely disadvantaged owing to arid and semi-arid climate that dominates the region, the scarce freshwater resources, and the current and expected impacts of climate change and the vulnerability to droughts and desertification. All these factors combine such that the countries in the region stand on the demand side on the international market, rather than optimally on the supply side.

There are large implications for food security crisis on the budgets of a number of Arab countries, particularly non oil-producing economies, given the fact that many of these subsidize fuel and food. Policymakers face a major challenge in dealing with short-term policy measures, as these measures aimed to alleviate the crisis are sometimes non-viable or have negative repercussions on the national economy in the long term.

⁴³ ESCWA, 2009, *Global and Regional Priorities: Financial Crises, Food Security and Climate Change*.

⁴⁴ Arab Fund for Economic and Social Development (AFESD) and Kuwait Fund for Arab Economic Development, 2010, *An Overview of Agricultural Development and Food Security in Arab Countries*.

3. Biodiversity and environmental protection

In 2010, UNEP published a report, entitled *Environment Outlook for the Arab Region*, which shed light on non-sustained demographical growth and high density of the population among the most dangerous drivers of environmental degradation in the region.⁴⁵ Population growth in the Arab region is the highest in the world. The total population is predicted to reach 586 million by 2050, representing 6 per cent of the world population, which is set to lead to increased pressure on the environment, including more consumption of water and non-renewable resources as well as higher pollution. Overgrazing, unsustainable use of water resources, pollution, sewage and industrial waste and the commercial use of biodiversity resources are common factors of biological loss.

While the legislative framework has significantly improved, the actual management of environment suffers from various deficiencies leading to a cost of environmental degradation ranging from 2.1 per cent of GDP in Tunisia to 4.8 per cent in Egypt, where half of this cost is attributed to air pollution alone, and close to 9 per cent of GDP in other countries.

Environmental indicators are worsening. Models by IPCC forecast an increase in the surface temperature in the region of 2°C to 5.5°C by the end of the century, and a decrease in precipitation that could reach -20 per cent. The Arab Forum for Environment and Development indicates that sea-level rise stemming from rising temperatures has the potential to cause the loss of significant portions of agricultural land in the Arab region. Specifically, a rise by one metre could potentially cause the loss of 12 per cent to 15 per cent of agricultural land in the Nile Delta region, and could reduce Qatar's land area by 2.6 per cent. The fragile marine and coastal environment is threatened by uncontrolled tourism, over-fishing, loss of biodiversity and climate change.

The region produces some 250,000 tonnes of solid waste every day, with most of it ending up untreated in makeshift dumps. Less than 20 per cent is properly treated or disposed in landfills, and no more than 5 per cent is recycled. The per capita production of municipal solid waste in some Arab cities, such as Abu Dhabi, Kuwait and Riyadh, is over 1.5 kg per day, thereby translating as one of the highest levels in the world. Furthermore, parts of the Arab region that are undergoing rapid economic development and urbanization are also producing substantial amounts of demolition and construction waste.⁴⁶

Health problems arising from air pollution are increasing. The transport sector is responsible for approximately 90 per cent of total emissions of carbon oxides in Arab countries, and some countries have carbon dioxide emissions levels above the world average. In 2003, emissions in the United Arab Emirates, Qatar, Bahrain and Kuwait were, respectively, 13, 9, 8 and 7 times higher than the global average.

Moreover, the use of nitrogen, phosphorus and potassium fertilizers quadrupled between 1970 and 2002, with certain Arab countries using some of the highest quantities of fertilizers per hectare in the world, including Egypt and the United Arab Emirates, at more than 900 kg of fertilizers per hectare; Oman, at 644 kg/hectare; and Lebanon, at 414 kg/hectare. In some countries, a significant proportion of the waste produced is not collected. In Egypt, for example, a third of municipal solid waste is not systematically collected. These problems are compounded by improper handling, collection, and treatment of hazardous wastes originating from agricultural, industrial, medical and urban activities.

⁴⁵ UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, available at www.unep.org/greeneconomy.

⁴⁶ Arab Forum for Environment and Development (AFED), 2008, *Arab Environment: Future Challenges*.

G. CLIMATE CHANGE IMPACTS AND FINANCING OPPORTUNITIES FOR A GREENER ECONOMY

Historically, the Arab region is one of the smallest contributors to greenhouse gas (GHG) emissions that lead to increased temperature. Compared to the total global emissions, the Arab region's contribution is about 4 per cent as estimated in 2008.⁴⁷ The effects of climate change on the region is set to be severe as predicted by global models, and the Arab region will become scientifically one of the areas most vulnerable to the potential effects of climate change in the entire world. Water resources are expected to be highly affected, which will further exacerbate already water scarce conditions in the region. There is a need to develop an integrated methodology in the Arab region to assess the impacts of climate change on water resources and related sectors, and to develop a scientific database to enable the application of such methodologies.

The financial aspects of climate change are key issues that are negotiated during international forums. Climate funding is currently available under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. As climate change adaptation and mitigation measures are implemented within the context of transfer to green economy, there will be opportunities for Arab countries to explore ways to make the best use of these available funds in greening their economies.

1. Assessing socio-economic impacts of climate change on water resources and other related resources

In recent years, the Arab region has witnessed severe climate change impacts, including rising temperatures and heat waves, droughts and flash floods, shifts in rainfall patterns in terms of the distribution in time and space, and reduced snow cover in the highlands and mountains of Lebanon, the Syrian Arab Republic and, and to a lesser extent, Iraq. In addition, rising sea levels stemming from global warming poses a great threat to fertile lowland deltas and to the quality of coastal aquifers due to saltwater intrusion. Climate change impacts are also expected to affect the social, economic and environmental aspects, particularly those in the most vulnerable groups, such as women, the elderly, children and the poor. It is also expected that the impacts of climate change will have negative impacts on other social and economic sectors and the environment, including agriculture, health, public safety, biodiversity, water desalination, tourism, energy production from water resources, and river navigation.

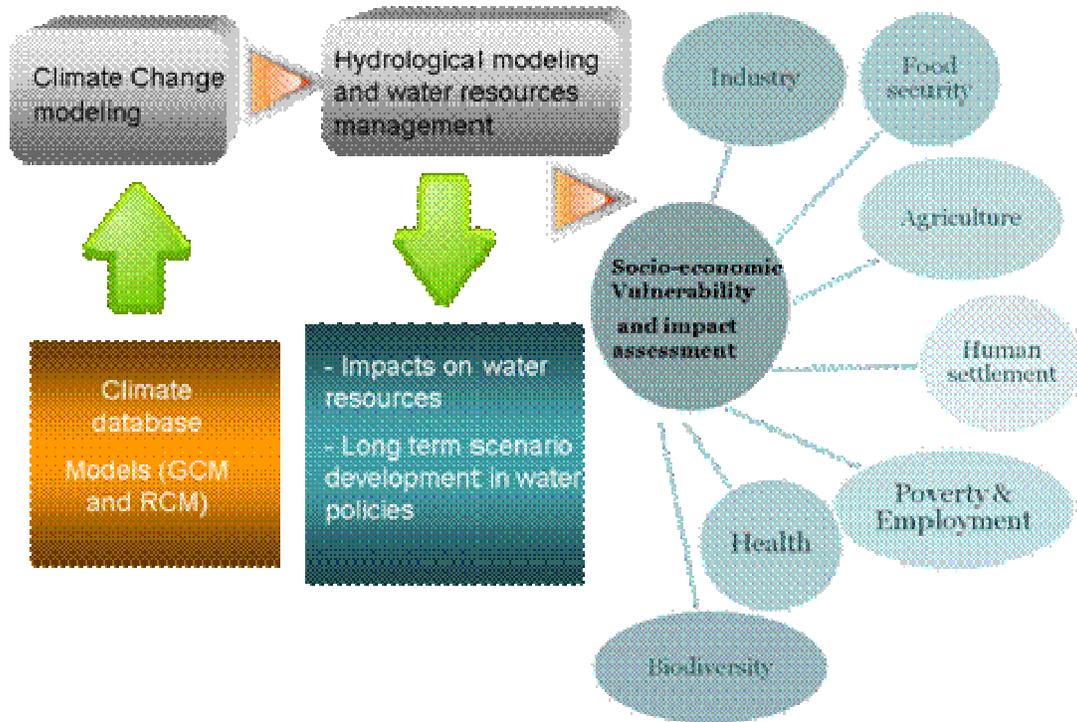
The impacts of climate change could undermine the process of implementation of national development plans and lead to exposure of human security and livelihoods, and displacement of people from threatened areas to safer locations. This situation could be further complicated given the region's high dependence on renewable surface freshwater resources that flow in from outside the region, which is estimated to be 70 per cent of the total available water resources.

Given that an integrated assessment has not been conducted to date aimed at assessing the impacts of climate change on the Arab region as a whole, ESCWA is currently implementing a regional initiative, in coordination with the League of Arab States and its specialized agencies as well as United Nations partners, entitled "Assessing the impact of climate change on water resources and socio-economic vulnerability in the Arab region". The initiative is based on four pillars, namely: (a) collection and review of baseline information, including the development of an associated knowledge management system for regional climate and hydrological data; (b) impact analysis and vulnerability assessment, which includes model identification and downscaling to the regional level, based on regional specificities; (c) awareness raising and information dissemination to produce policy-relevant materials, such as a brief on vulnerability hotspots; and (d) capacity-building and institutional strengthening on a variety of topics, including climate change modelling and vulnerability assessment.

⁴⁷ International Energy Agency (IEA), 2010, *CO₂ Emissions from Fuel Combustion 2010 – Highlights*.

Within the framework of implementation of this regional initiative, a conceptual framework and a plan of action have been developed. In order to assess the impact of climate change on water resources and conduct a vulnerability assessment on its implications for socio-economic development across various sectors. This framework is represented by three, interrelated components, namely climate modelling, hydrological modelling and the assessment of socio-economic and environmental vulnerability (see figure VIII).⁴⁸ All three components are dependent upon access to and availability of reliable data.

Figure VIII. Conceptual framework for climate change impact and vulnerability assessment of water resources and related sectors



2. Financing green economy and linkages to climate change funds

Governments across the world have made many efforts to generate green fiscal stimuli in response to global crises. It is estimated that, within the context of reducing ecological scarcities and environmental risks, US\$445 billion was allocated for various sectors, including railways, energy efficiency, renewable energies, water and wastewater, and transport.⁴⁹ For instance, China allocated US\$218 billion as a green fund, half of which was allocated for railway infrastructure. Similarly, the Republic of Korea has been efficient in spending green packages to the tune of approximately US\$2.3 billion in 2009.⁵⁰ South Africa launched a financial programme of US\$7.5 billion in 2008 covering the period 2009-2011, about US\$800 million of which was allocated to environment-related activities. In 2009, Mexico launched an initiative, entitled “National Agreement in Favour of Family, Economy and Employment”, with 0.67 per cent of GDP, or about US\$800 million, reserved mainly for energy-efficient buildings.⁵¹ In Uganda, where 85 per cent of

⁴⁸ ESCWA, *Status of the Vulnerability Assessment of the Arab Water Sector to Climate Change* (E/ESCWA/SDPD/2011/IG.1/3).

⁴⁹ UNEP, 2009, *Global Green New Deal: A Policy Brief*.

⁵⁰ Robins, N., Clover, R. and Saravanan, D., 2010, *Delivering the Green Stimulus*, HSBC Global Research.

⁵¹ UNEP, 2009, *Global Green New Deal: A Policy Brief*.

the population works in agricultural production, remarkable progress has been achieved towards sustainable, organic farming, with exports of organic agricultural products more than quadrupling between 2003 and 2008, thereby tapping into a global market of US\$60 billion.⁵² In the United Kingdom of Great Britain and Northern Ireland, there are plans to establish a green investment bank, which would constitute the first national green development bank in the world. The Government has guaranteed 3 billion Great Britain pounds (approximately US\$4.7 billion) for the initial capitalization of the bank and also legislation will be brought forward to ensure both its operational independence and enduring nature.⁵³

It is essential to consider all financing options in the global green economy, including the climate investment, given that there are an increasing number of global climate funds available to invest in climate change mitigation and also adaptation activities. It is estimated that US\$521 billion was allocated to climate change measures by the end of 2009. The delivery in 2009 was weaker than expected as it accounted for only US\$82 billion.⁵⁴ Globally, the funding available through UNFCCC and the Kyoto Protocol is the most important source of international funding for climate projects. These sources include the Clean Development Mechanism (CDM), the joint Implementation programme (CCAP-JI), the climate change programmes of the Global Environment Facility (GEF) and the adaptation fund.

Additionally, the World Bank provides some other sources, such as the Climate Investment Funds and bilateral initiatives supported by developed countries.⁵⁵ For instance, the GEF's climate programmes provide about US\$250 million per year for projects in energy efficiency, renewable energy and sustainable transportation. The GEF funds also manage two small specialized funds for UNFCCC, namely the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). The latter fund has a broader mandate to address adaptation, technology transfer and other related areas. These funds, which are mainly contributions from national Governments in developed countries, reached US\$172 million for LDCF and US\$90 million SCCF till 2008. The Climate Investment Funds had contributions up to US\$6.1 billion in 2008 from ten donor countries in response to the Bali Action Plan, which have been allocated as grants and loans.

Other funds include the Clean Technology Fund, which incorporates funding opportunities for electric power, transport and energy efficiency; and the Strategic Climate Fund assigned for new developments in adaptation projects.⁵⁶ From the above figure, it can be noted that the current availability of funding for climate change projects is nevertheless small compared to what has been promised by developed countries. Specifically, less than US\$10 billion per year has been made available from the UNFCCC channels mainly from CDM, in addition to some US\$5 billion from the World Bank investment funds as described above.

These financial mechanisms for both climate change adaptation and mitigation provide good opportunities to initiate new projects or modernize existing ones within the context of green economy and eradicating poverty by creating new jobs and improving people's incomes. Green funds stemming from both new and existing sources are also currently being debated by developing and developed countries during the negotiation forums that are held in preparation for Rio+20 in 2012.

It is important to note that during the Conference of Parties in Copenhagen (COP-15), developed countries were committed to provide new and additional resources through international institutions to the

⁵² Walta Information Centre, 2011, *World's Least Developed Countries Fertile Ground for Green Economy*.

⁵³ According to a speech on the green economy delivered on 23 May 2011 by the Deputy Prime Minister of the United Kingdom, Nick Clegg, available at [www.libdems.org.uk/latest_news_detail.aspx?title=Nick Clegg%E2%80%99s speech on the green economy&pPK=0e1da756-bb98-489e-9e72-d97c95a0715b](http://www.libdems.org.uk/latest_news_detail.aspx?title=Nick+Clegg%E2%80%99s+speech+on+the+green+economy&pPK=0e1da756-bb98-489e-9e72-d97c95a0715b).

⁵⁴ Robins, Clover, and Saravanan, op. cit.

⁵⁵ United Nations Conference on Trade and Development (UNCTAD), 2009, *Financing the Climate Mitigation and Adaptation Measures in Developing Countries, G-24 Discussion Paper Series*, No. 57.

⁵⁶ Ibid.

tune of almost US\$30 billion over the period 2010-2012, with balanced allocation between adaptation and mitigation. Investment for adaptation will be prioritized for the most vulnerable developing countries, particularly LDCs. Within the context of meaningful mitigation actions and transparency on implementation, developed countries aim to mobilize collectively US\$100 billion per year by 2020 in order to address the needs of developing countries. This funding will come from a wide variety of sources and such funding should flow through the Copenhagen Green Climate Fund.⁵⁷

In Cancun during COP-16, the process to design the Green Climate Fund was established and a new framework was set up, namely, the Cancun Adaptation Framework, to allow better planning and implementation of adaptation projects in developing countries through increased financial and technical support.⁵⁸ The next climate change conference in Durban, South Africa in December 2011 and its preparatory meetings are expected to focus on finalizing and adopting the institution-building arrangements launched in Cancun, including financing mechanisms.

A recent joint report by FAO and International Fund for Agricultural Development (IFAD) indicated that agriculture and forestry were perhaps the most climate-sensitive of all sectors and hence potentially the most vulnerable. Climate change hotspots are predicted to appear within areas where food insecurity will be a major problem. Consequently, there is a large potential in these land-based sectors for generating emission reductions for which financing, incentive and/or payment mechanisms will be needed. Financial flows to these sectors in developing countries, estimated to be as high as US\$20 billion to 100 billion in 2030, would be of great relevance to both climate change mitigation and in terms of meeting the expected costs of adaptation, and for generating such co-benefits as food security, livelihoods/income for the rural poor, provision of environmental services and substantial contributions to the economies in the Arab region.⁵⁹

With regard to the housing sector, cities account for more than 80 per cent of the world's total greenhouse gas emissions. In addition, more than 80 per cent of the overall annual global costs of adaptation to climate change are estimated to be borne by urban areas. The World Bank estimates that, with expected increases in urbanization and higher income levels, most urban infrastructure that will exist in 40 to 50 years has not yet been built, nor have all the locations been determined. This means that rapidly growing cities can be built better and avoid locking in costly, high-emitting and non-climate-resilient infrastructure.⁶⁰

However, many of the mitigation opportunities in cities can have a higher initial cost than providing the same services through conventional solutions. While several tools, including property taxes and fees, can be considered to fund these incremental costs by national resources, there is a reluctance to raise taxes. At the international level, various schemes are emerging, including carbon finance, such as climate funds and the recent introduction of green bonds by the World Bank. However, with the exception of a few countries, the region lacks the capacity needed to follow the complex procedures in order to take advantage of existing financing mechanisms. Overcoming these constraints will require capacity-building, technical support, innovative policy and institutional solutions at both the national and international levels, as well as the simplification of procedures.

H. PEACE AND SECURITY, AND POLITICAL INSTABILITY

Peace and security in the Arab region encompasses more than the settlement of border disputes and basic human security guarantees. Water and food securities are increasingly becoming more important

⁵⁷ United Nations Framework Convention on Climate Change (UNFCCC), 2010, *Report of the Conference of the Parties on its Fifteenth Session, Held in Copenhagen from 7 to 19 December 2009*, available at <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>.

⁵⁸ Ibid.

⁵⁹ IFAD and FAO, 2009. Financing Climate Change Adaptation and Mitigation in Agriculture and Forestry Sectors.

⁶⁰ World Bank, 2010. Climate Finance in the Urban Context, Issues Brief 4.

priorities for Arab countries. The lack of regional peace and security directly hinders the sustainable and effective management of shared water resources and ecosystems. Efforts to remedy damages to marine, coastal and urban environments caused by regional conflicts must be subject to post-conflict resolutions. Moreover, the social and environmental disturbances of informal settlements, refugee camps and displaced communities will not be adequately addressed until peace and security are achieved in the region.⁶¹

The negative impact from the ongoing Arab-Israeli conflict has been substantial. The conflict has generated a large population of Palestinian refugees, estimated at 2.5 million outside of Palestine. Many refugees continue to live in camps and exert pressure on the scarce resources of their host countries. Moreover, issues over shared water resources have yet to be resolved and negatively affect water demands, agriculture, municipal consumption and sustainable use in riparian countries. Additionally, the Golan Heights have been occupied by Israel since 1967 and much of the indigenous Syrian population fled during the wars of 1967 and 1973, leaving Israel to establish 33 settlements in the area. The Golan Heights region holds important water resources and feeds into regional water supplies, thereby playing a strategic role in the Arab-Israeli conflict. There are also other conflicts and tensions within or between countries of the region that slow down development. The damage sustained by Iraq during the second Gulf War brought its production to a virtual standstill, owing to the destruction of the industrial and service sectors of the country. There have been several environmental consequences, including the contamination of the soil and the marine environment stemming from the destruction of oil wells, oil storage facilities, refineries and electric power stations.

Military expenditures to purchase arms for the conflicts in the Arab region as well as post-war reconstruction and resettlement costs have significant negative repercussions on public revenues and sustainable development. First, military budgets deduct resources from spending allocated to achieve sustainable development goals, particularly during periods of fiscal austerity and uncertainty. Secondly, instability and concerns over peace and security reduce confidence in economic recovery and hinder trade and investment, particularly FDI. Besides, peace and security have long-term positive impacts on tourism and foreign exchange earnings. While Arab region's share of the world tourism industry is still very modest, amounting to 4-5 per cent of the world total, the sector had been steadily growing prior to the recent escalation of the Arab-Israeli conflict and the uprisings in many countries in the so-called Arab Spring.⁶² Financial loss in the tourism sector is currently having serious implications on public spending, employment and income generated from traditional small jobs that involve significant labour force, thereby hindering the ability of Arab countries to allocate sufficient resources to implement sustainable development plans.

I. YOUTH REVOLUTIONS AND UPRISINGS

The region has witnessed protests and uprisings seeking social and political freedom and real democracy through participation in Government decision-making. These revolutions, collectively known as the Arab Spring, are mainly driven by youth and raise hope for increased democracy throughout the region. The challenges for the region in the short and medium terms are tremendous. Uncertainties on the exact nature of the institutional settings that will govern each country and on the precise macroeconomic policies that will be followed have halted investment and slowed down economic activities. In Egypt, for example, the uprising could largely be attributed to high inflation rates over recent years, which reached a high of 18 per cent in 2009; an increasing number of people living below the poverty line, at more than 30 per cent; and a high youth population, amounting to some 12 per cent of the active population. This turbulent mix has had significant repercussions on Egypt's economy. Annual growth rate was expected to reach 6 per cent in the beginning of 2011 and was revised to 4 per cent following the uprising.⁶³ The tourism sector, which

⁶¹ ESCWA, *The Effects of Peace and Security on Sustainable Development in the ESCWA Region – Briefing Paper 16* (E/ESCWA/ENR/2002/16).

⁶² UNDP, 2009, *Arab Human Development Report*.

⁶³ Management Guru, 2011, *Potential economic benefits from uprising in Egypt*, available at <http://themanagementguru.blogspot.com/2011/03/potential-economic-benefits-from.html>.

accounts for about 6 per cent of national GDP, was particularly affected given that the uprising took place during the peak tourism season and that one million tourists left Egypt as a result of the violence, thereby adversely impacting the main source of foreign currency for the country. Economic loss at the peak of the revolution was an estimated US\$300 million per day, with a potential budget deficit of 12.3 per cent.⁶⁴ This also resulted in many costly decisions taken by the Government to increase the subsidies for fuel and food in order to offset any further discontents.

In Tunisia, tourism has decreased by 50 per cent, industrial output by 12 per cent and the proceeds of Tunisian migrants by 12.5 per cent since the beginning of 2011.⁶⁵ Given the volatile situation in neighbouring Libya, Tunisia has lost flourishing trade activities and has had to manage an increasing flow of refugees. Both Egypt and Tunisia have called on the international community to provide financial support over the next year to the tune of an estimated US\$1 billion for Tunisia and US\$10 billion to 12 billion for Egypt.⁶⁶ Tunisia is finalizing a five-year economic restructuring plan worth US\$25 billion that was presented to the G8 Summit in May 2011.⁶⁷ Within that context, the Summit has promised a package of financial assistance by international development banks for both Tunisia and Egypt of some US\$20 billion.

Egypt's economy is expected to take at least one to one and a half years to stabilize once the country has transformed into a stable and liberal democracy, which will boost investor confidence and FDI. A new atmosphere of transparency will also encourage more reforms in the educational system; help to streamline policies aimed to generate employment in the private sector, especially for youth; reap benefits from globalization and privatization. In the long term, upon a successful transition and new institutions that are fully in place and operational, increased democracy and freedom will undoubtedly help to establish an improved business environment, thereby encouraging investment in productive and value added economic activities, which in turn will create increased number of decent jobs and help decrease unemployment.

These recent uprisings provide great opportunity for positive reforms and change. The new regimes should promote economic integration and growth in areas that support employment creation and income generation across segments of society, especially the youth and skilled labour. This calls for effective dialogue and analysis regarding linkages between education and innovation, access to financing, access to basic services (water, electricity) in a manner that addresses greener economies to lead to integrated management of limited natural resources; and acknowledging the need for sustainable development aimed to prevent new and additional conflicts in the future and to achieve social equity and justice.

The economic success of the transition in Egypt and Tunisia depends now on three major factors, namely:

(a) Responding to the tremendous social expectations of the population without further increasing budget deficits. So far, the only responses to social tensions have been increases in food subsidies and government jobs. While targeted social programmes are more complicated to design, they are vital for the whole region if economic growth and stability are to combine with social protection;

⁶⁴ Economics Weekly, 2011, *Egypt: The costs of an uprising*.

⁶⁵ Nord-Sud Expert (NSE), available at www.risques-internationaux.com/bienvenue/activites.htm.

⁶⁶ International Monetary Fund (IMF), 2011, *Statement by an IMF spokesperson on the Arab Republic of Egypt*, available at www.imf.org/external/np/sec/pr/2011/pr11174.htm.

⁶⁷ Magharebia.com, 2011, *Tunisia to seek \$25 billion support at G8 summit*, available at www.magharebia.com/cocoon/awi/xhtml1/en_GB/features/awi/newsbriefs/general/2011/05/22/newsbrief-04.

(b) Succeeding in transferring companies that were illegally owned during the former regimes to new owners without harming and/or halting industrial activities;⁶⁸

(c) Convincing the international community of a larger financial as well as technical involvement in helping countries with such issues as the management of increased migratory pressures, the diversification of economies and the reform of educational systems.

⁶⁸ Such companies account for 33 per cent of total GDP in Tunisia. See Nord-Sud Expert (NSE), available at www.risques-internationaux.com/bienvenue/activites.htm.

III. MAJOR CONCERNS AND PERCEPTIONS ON THE TRANSITION TO A GREEN ECONOMY

While the opportunities offered by the promotion of green economy interventions are generally found attractive by all, developing countries remain concerned that a full-scale transition to a green economy will become yet another instrument that imposes conditions and constraints on their development and on improving human welfare in their countries. Set forth below are the key challenges that developing countries, including those in the Arab region, could face in adopting green economies.

A. ENVIRONMENTAL STANDARDS, NON-TARIFF BARRIERS TO TRADE AND COMPETITIVENESS

There is a general concern by developing countries that the transition to a green economy could result in the imposition of non-tariff barriers to trade (NTBs), unnecessary tariff barriers or, possibly, taxes or bans on products and production processes that do not follow environmental performance standards that are able to be met by industrial and developed countries. While the imposition of stringent environmental standards is allowed under international trade rules, the non-discrimination principle states that the same rules that are required of imports must also be applied on domestic producers. While access to green investment funds can help industries to improve their environmental performance and access to international markets, the availability of such funds is limited, as is the human and technical capacity needed to achieve environmental improvements in the short term. This has had implications for market access and the competitiveness of Arab products in some sectors, such as the textile and agro-food sector.⁶⁹

As more and more countries become familiar with the basic concepts and modalities of a green economy, international trade is expected to be influenced by new green mechanisms that regulate the global marketplace of national goods and services. National products that are very likely to be subject to environmental standards will have better opportunities to be marketed in foreign markets.

This represents both a big opportunity and challenge for Arab countries. Specifically, the specialization of national SMEs in “green niche markets” related to green production sectors will help them to play a central role in the international trade exchanges in the future. The compliance with environmental standards, which usually require internally reshaping industries or changing the production and process methods, could affect the competitiveness of the companies with consequent loss of productivity and employment. However, this can be compensated by a strategic company reassessment aimed to reduce other internal costs and by better positioning the concerned company in the market.

B. IMPACTS OF GREEN SUBSIDIES

The issue of green subsidies can be seen either as an opportunity or as a challenge depending on the strategy adopted for their application. While the goal of improving environmental performance of products and production processes is one that should be sought, developing countries have to be aware that industrialized countries are imposing environmental standards that are attainable in their own countries given the industrial support packages or subsidies. Typically, developing countries in the South cannot afford these subsidies owing to a lack of financial, technical and human resources aimed at supporting green investment or innovation.

An interesting approach has been proposed by Khan et al. who identify “good”, “bad” and “ugly” categories of subsidies.⁷⁰ Within that context, “good” incorporates measures adopted, for example, to

⁶⁹ ESCWA, *The Impact of Environmental Regulations on Production and Exports in the Food Processing, Garment and Pharmaceutical Industries in Selected ESCWA Member Countries* (E/ESCWA/ED/2001/14).

⁷⁰ Khan, A. et al., 2006, *The Nature and Magnitude of Global Non-Fuel Subsidies*.

encourage sustainable activities as R and D in environmental technologies; “bad” are considered the subsidies to lower artificially the cost of fossil fuels or pesticides, and more generally measures at the opposite scale of the one established by the green economy; and “ugly” subsidies result in ambiguous policies that can achieve positive or negative effects, including, for example, fertilizer subsidies that can increase land productivity but also increase water pollution. National policies aimed at developing a green economy should clearly give priority to “good” subsidies by setting up a coherent and economic viable strategy.

C. RETRAINING AND THE CREATION OF DECENT JOBS

The specialization of national economies in green productive sectors and the investment to create green jobs brings across the issue of training and skill development. Given a shortage of skilled labour in higher technology services, the time and investment needed to retrain or train youth in these new sectors could represent a crucial obstacle towards a green economic expansion.

ILO has defined a new category of workers, so called “green collars”, who represent key figures in the economy of the future. A good cooperation among research institutions, vocational training institutes and universities has to find place in the political agenda of both developing and developed countries. For instance, among developed countries, proposed legislation by the United States of America could provide funding of up to US\$125 million to establish job training programmes, relevant curricula and job standards. National and international stakeholders can join forces in developing countries in terms of setting up green training and expertise centres in order to ensure that investments in the green economy do not face shortages in adequately trained workers.

The major problem in the Arab region is the inability to generate jobs for youth, whose unemployment reached about 50 per cent, with a higher proportion for women.⁷¹ There is a high rate of unemployment among educated youth who have completed secondary and/or tertiary education. As the green economy concepts call for investing in green, clean and sustainable sectors to support development of sustainable enterprises and create decent work opportunities, there still remain many challenges and policy gaps that should be overcome. ILO has proposed priority areas for decent work in the Arab region that can sustain and initiate jobs without sacrificing productivity. These priority areas include enhancing diagnosis for the informal economy in the region; provide support to active labour market programmes and to SMEs by linking incentives to productivity and working conditions; developing training and education systems; and establishing a regional observatory of labour markets in the Arab region aimed to assess the impact of economic policies in terms of employment.⁷² Key decisions still need to be made on investing in skills to deal with employment adjustments in such sectors as energy, transport, agriculture and others when designing macroeconomic policies in the Arab region.

D. MEASURING PROGRESS TOWARDS THE TRANSITION TO A GREEN ECONOMY

In developing a regional strategy for a green economy, common methodologies and measuring instruments need to be set in order to assess progress and choices made given the conflicting policy goals among various sectors involved. An approach should be developed to differentiate between green and non-green measures. The United States Department of Commerce has carried out a study to estimate the proportion of the green products and services to the total national economy in 2007.⁷³ Their estimate ranged from 1 per cent to 2 per cent of total private business economy, based on specific classifications of what is

⁷¹ ILO, 2009, *Growth, Employment and Decent Work in the Arab Region: Key Policy Issues*.

⁷² ILO, 2011, *Promoting Decent Work in a Green Economy*; and ILO background note to UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*.

⁷³ Economic and Statistics Administration (ESA), *Measuring the Green Economy* (United States Department of Commerce, April 2010).

considered “green”. The product or service was considered “green” if it conserved energy or other natural resources or reduced pollution. The number of green jobs associated with this range was an estimated 1.8 million to 2.4 million jobs. The study called for the establishment of national benchmarks aimed to measure the progress towards greener economy.

There is a need to develop guidelines to identify and recognize “green” economy activities that are standardized and harmonized for all Arab countries, thereby monitoring progress and achievements. Indexes that could measure environmental, social or human capital need to be developed. For instance, such indicators as environmental assessment, conservation of resources, pollution reduction, created number of jobs, revenues, average income per employee, economic welfare and income distribution, among others, would enable measuring the performance of activities within the context of the green economy and would provide more accurate estimates of their sizes. In this connection, China has developed an index, namely, “Green GDP”, which measures economic growth and incorporates environmental consequences. The United States has also approved the initiation of some research on “green accounting”, which could be a major step and a better means of measuring “greener” progress.⁷⁴

⁷⁴ Nelson, J., *Measuring Progress* (Post Growth Institute, 5 January 2010), available at <http://postgrowth.org/measuring-progress/>.

IV. OPPORTUNITIES FOR MAINSTREAMING GREEN ECONOMY IN NATIONAL SUSTAINABLE DEVELOPMENT POLICIES AND PLANS

A. OBJECTIVES

Green economy activities that are properly designed could provide opportunities for poverty reduction and sustainable development through increased economic growth, job creation and improved governance of Government policies. The biggest challenge for Arab countries is to determine which entry points into a green economy will provide the maximum benefits for all segments of society. Of particular importance is the need to determine policy reforms, based on national circumstances, that can develop economic activities in which a country can have a competitive position in global green markets.

This chapter attempts to identify a number of green economy opportunities for the Arab region, based on the following criteria: (a) promoting faster growth than a brown economy while maintaining and restoring natural capital; (b) enhancing social equity and jobs creation; (c) promoting enhanced resource and energy efficiency; (d) substituting renewable energy and low-carbon technologies for fossil fuel; and (e) delivering more sustainable urban living and low-carbon mobility.

B. ENERGY EFFICIENCY AND THE PROMOTION OF RENEWABLE ENERGIES

Energy is an essential factor of production. Economic development cannot be conceived without available and technically suitable sources of energy. Ongoing efforts to promote an efficient use of energy and to replace fossil energy sources by renewable energies prove to be labour intensive. Compared to fossil fuel power plants, renewable energy generates more jobs per unit of installed capacity, per unit of power generated and per dollar invested.⁷⁵ It is estimated that the sector employs more than 2.3 million people across the world, including some 300,000 workers in wind power and nearly 170,000 in solar photovoltaic industries. In only four countries, namely Brazil, China, Germany and the United States, an estimated 1.2 million workers are employed in generating biomass-derived energy, mostly biofuels. UNEP estimates that these figures will rise by 2030 to 2.1 million in wind energy and 6.3 million in solar photovoltaic industries, and to the order of 12 million jobs in biofuel-related agriculture and industry. Moreover, jobs in installing, operating and maintaining renewable energy systems tend to be more local in nature and are therefore seen as important income-generating activities in developing countries.

Many countries in the Arab region are attempting to have their share of the spillover effects of renewable energy promotion. In Yemen, connecting remote villages to the electric grid system is too costly. With the support of ESCWA, one village, namely Ka'awa, is generating electricity through solar energy. Results in this pilot village show a positive social and economic impact on services rendered by schools and health centres, better conservation of fish (the village's main activity), improved access to information through television and radio, and improved skills of workers operating in the maintenance of the solar systems.

Morocco launched an ambitious programme aimed to reach 20 per cent of renewable energies of total energy production by 2012. In 2010, the country created the Moroccan Agency for Solar Energy in charge of establishing a project worth US\$9 billion involving the construction of a two-gigawatt solar plant over five sites to be completed by 2019. The project is expected to allow Morocco to save the equivalent of 1 million tonnes of fuel every year and to prevent the emission of 3.7 million tonnes of CO₂. While the economic impact of the project has not been quantified, it is expected to have a favourable impact on jobs and investments, particularly in the southern and remote Ouarzazate region, where the plant is to be built.⁷⁶

⁷⁵ UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, available at www.unep.org/greeneconomy.

⁷⁶ *L'Economiste*, Moroccan, daily newspaper specialized in economic issues, 4 October 2010.

Successful experiences in renewable energy production, both small and large scale, are abundant in the region (see boxes 1 and 2). However, supporting policies need to be put in place for these experiences to produce the desired spillover benefits over the long term. Renewable energy has the potential to become a major pillar in a green economy in the Arab region.

Box 1. Renewable energies enable the creation of more than 1,000 new companies in Tunisia

Over the period 2005-2008, clean energy plans have allowed the Government of Tunisia to save US\$1.1 billion in energy bills, relative to initial investments of US\$200 million in clean energy infrastructure. Primary energy consumption from renewable sources together with savings from energy efficiency are expected to reach 20 per cent of total energy consumption in 2012. In December 2009, the Government presented the first national Solar Energy Plan and other complementary plans with the objective of increasing the share of renewable energy sources from just under 1 per cent to 4.3 per cent by 2014. The Plan includes the use of solar photovoltaic systems, solar water-heating systems and solar concentrated power units for electricity generation. Total financial resources to implement the plan have been estimated at US\$2.5 billion, including US\$175 million from the National Fund, US\$530 million from the public sector, US\$1.66 billion from private sector funds, and US\$24 million from international cooperation; all of which has been earmarked on 40 renewable energy projects by 2016. Approximately 40 per cent of the resources are devoted to the development of energy export infrastructure. The energy savings expected to result from the Solar Energy Plan could reach 22 per cent for 2016, with a reduction of 1.3 million tonnes per year of CO₂.

The Tunisian Solar Programme (PROSOL), which is a joint initiative of the Tunisian National Agency for Energy Conservation (ANME), the Société Tunisienne de l'Electricité et de Gaz (STEG), UNEP and the Ministry for the Environment, Land and Sea in Italy, provides an example of solar thermal market development. Financial and fiscal support combines a capital grant qualifying for VAT exemption, customs duty reduction and a bank loan with a reduced interest rate. Repayment of the loan is organized through the regular utility bill of the State electric utility, namely, STEG, with local banks receiving support that allows them to finance solar water heater (SWH) projects with reduced interest rates.

This arrangement has generated direct financial benefits for the end users, when comparing the size of the monthly installments for a SWH system to the earlier electricity bills. A complementary interest rate subsidy was available during the first two years of the programme in 2005-2006, which reduced the interest rate of the loan to nil to the final end user. This support was removed in 2007 and annual interest rates for loan repayment have been set at 6.5 per cent. The Government provides a subsidy of 20 per cent of the system cost or US\$75 per square metre, while customers are expected to finance a minimum of 10 per cent of the purchase and installation costs.

Currently, more than 50,000 Tunisian households obtain their hot water from the sun based on loans amounting to more than US\$5 million in 2005 and US\$7.8 million in 2006, thereby representing a substantial leverage to PROSOL's initial cost of US\$2.5 million. With installed surface of the programme reaching 400,000 m², the Government has now set a more ambitious target of 750,000 m² for the period 2010-2014, a level comparable to much larger countries such as Spain or Italy. As of 2008, PROSOL helped to avoid 214,000 tonnes of cumulative CO₂ emissions.

Moreover, jobs have been created, with the official registration of 42 technology suppliers and the establishment of at least 1,000 companies in the systems. The experience demonstrates the potential returns on investing in renewable energy, creating new jobs, and reducing dependency on fuel imports.

Source: UNEP, 2010. Green Economy, Developing Countries Success Stories.

Box 2. Wind energy in Egypt

Egypt has been one of the leading countries in the Arab region in terms of developing a national wind atlas and of exploiting wind energy for large-scale electricity production. In 2009-2010, hydroelectric power represented a share of 9 per cent of total energy produced in Egypt, while wind power from Zafarana Farm contributed 0.8 per cent, or 1,133 gigawatt hour (GWh). In terms of installed capacity, hydro and wind contributed 11 per cent and 2 per cent, respectively, of total capacity during the same period.

Wind power capacity in Egypt has steadily been increasing since 2005; and the rate of increase is expected to grow further as the country attempts to achieve the ambitious national strategy set by the Ministry of Electricity and Energy and approved by the Higher Council of Energy in 2007 to increase by 2020 the share of renewable energy in total electricity production to 20 per cent, representing 7,200 megawatts (MW) and broken down as 8 per cent from hydro and 12 per cent from wind and other renewable sources of energy. It is worth noting that the private sector, particularly Independent Power Producers (IPPs), is expected to play a leading role in this development, contributing around two-thirds of the total investments required to reach the targeted capacity.

In order to support this expansion, the Government of Egypt has earmarked an area of 7,647 km² for the construction of wind farms, with almost free access to investors. Five wind farms, each with a production capacity of 250 MW were announced in 2009-2010, based on build-own-operate (BOO) contracts for 20 to 25 years, the first of which is expected to become operational in 2014. Other schemes to be applied to the private sector include a feed-in tariff system aimed at smaller wind farms having a capacity of up to 50 MW whereby the Government guarantees a fair purchasing price covering costs and returns on investment.

Through this strategy, Egypt will benefit from low-carbon emission certificates while boosting local manufacturing opportunities for some of the wind energy equipments, including iron structures, air turbines and electrical equipments.

Source: Ministry of Electricity and Energy in Egypt, Egyptian Electricity Holding Company, *Annual Report 2009-2010*, available at www.moe.gov.eg/English/Takareer/2009-2010.pdf.

C. INDUSTRY

Apart from investments in specifically green activities covered in other sections, the focus here is on greening the brown, in other words investments that help to improve environmental performance in existing, more traditional, sectors. For example, steel recycling saves 40 to 75 per cent of the energy needed to produce virgin steel. This is important for such ESCWA member countries as Egypt, Lebanon, Oman, Qatar and the Syrian Arab Republic where steel production is a significant part of total output and represents an average of 7 per cent of industrial exports, and 14 per cent in Qatar.⁷⁷ A proactive policy in the Arab region in favour of low-carbon, high-quality steel can help to retain jobs. Several countries and regions rely to a significant degree on scrap for their steel production, including the Commonwealth of Independent States, Germany, Japan, Republic of Korea, Spain, Turkey and the United States,. Their steel employment is trending towards green; and globally, more than 200,000 people work in secondary production.

Aluminium, which is a major input in construction and infrastructure projects, is expected to play an increasingly significant role in the industrial sector of GCC countries. It accounts for 12 per cent and 7 per cent of GDP in Bahrain and Dubai, respectively. With more than US\$14 billion in planned investments, aluminium production in the Gulf subregion is projected to rise from 1.5 million tonnes in 2005 to more than 5 million tonnes in 2009. Other proposed projects could lift GCC production beyond 7 million tonnes by 2012, giving the region 18 per cent of world output.⁷⁸ Like the steel sector, the aluminium

⁷⁷ According to data presented to the Expert Group Meeting on the “Role of Energy Networks in Regional Integration” Beirut, 22-23 December 2009 (E/ESCWA/SDPD/2009/WG.4/1), (in Arabic).

⁷⁸ AMEinfo, 2006, *Aluminum will give economic diversification a big boost in the GCC*, available at www.ameinfo.com/94645.html.

industry can be more energy-efficient. Scrap-based production saves up to 95 per cent of the energy required to make aluminium from scratch. Currently, more efficient production methods account for about 22 per cent of total aluminium production worldwide and provide some 13,000 jobs in Japan, more than 10,000 in Europe, and roughly 6,000 in the United States.

New and innovative financing mechanisms have to be conceived as a support for the green economy in the industrial sector. New insurance initiatives, for example, can reduce climate-related financial losses and help to protect existing jobs and generate new employment as a result of a decreased risk for future investment.

The establishment of industrial zones that can facilitate the establishment of green industries can also be promoted through innovative financing arrangements partnered with green investment. This can not only assist in creating new green businesses, but also encourage existing businesses to relocate to an industrial zone with high environmental performance standards and, consequently, go green. This was confirmed in a case study conducted by ESCWA of SMEs in Jordan (see box 3).

Box 3. Environmental management policies and SME competitiveness in industrial zones in Jordan

With focus on Jordan, an ESCWA study examined the impact of Government industrial policies seeking to establish and promote the sound management of industrial zones on SME competitiveness. The hypothesis was that industrial zones could foster opportunities for networking and industrial clustering through geographic proximity and economies of scale and, by so doing, facilitate investment in the environmental services and infrastructure needed to support industrial development. Impact assessment methods found that the enforcement of sound environmental management practices in industrial zones did not adversely impact the competitiveness of SMEs and did not dissuade smaller firms from establishing themselves in industrial zones. The study concluded that industrial development goals embodied into industrial zone policies could be achieved complementarily with sustainable development goals, without any contradictions. As such, environmental considerations needed to be incorporated into industrial zoning policies and planning from the onset.

Source: ESCWA, "Impact of industrial policies on the competitiveness of small and medium-sized enterprises" (E/ESCWA/SDPD/2007/7).

D. TRADE

Trade is a powerful driver of economic growth, which is indispensable to reduce poverty and foster development. At the same time, it can be an important lever in terms of incentives for the production of goods and services that protect the environment. Currently, new markets offer tremendous opportunities for producers if they are able to comply with the increasing number of environmental and health requirements that are being adopted by Governments and the private sector in support of sustainable development. It is commonly admitted that a balanced approach to the global trading system is needed in order to maximize opportunities for developed and developing countries, and serve both environmental and development goals. ESCWA has been working closely with its member countries in order to improve the export competitiveness of local industries and define a position with regard to the relationship between international trade and multilateral environmental agreements.⁷⁹ If such efforts continue within the context of increased green economy productions, the region could benefit more from the growing world demand for goods and services that protect the environment.

Indeed, the global market for environmental goods and services (EGS) has been growing steadily. It was estimated at more than US\$3.8 trillion in 2008/2009 compared to US\$360 billion in 1990.⁸⁰ In the Middle East alone, the EGS market was valued at 1.6 per cent of the global market (about US\$10 billion),

⁷⁹ ESCWA, 2010, *Report on the Regional Workshop on Trade and Environment: Developing the Environmental Goods and Services Sector in the Arab Region for Transformation into a Green Economy*.

⁸⁰ Innovas Solutions and K Matrix, *Low Carbon and Environmental Goods and Services: An Industry Analysis – Update for 2008/09* (Department of Business Innovation and Skills, March 2010).

representing 1 per cent of the region's GDP in 2004. During the same year, the market was divided between US\$4.4 billion spent for environmental goods and for US\$5.3 billion spent on environmental services.⁸¹

The EGS market is expected to grow with the increase of green investment opportunities. In developing countries, EGS will particularly be needed for sustainable agriculture, water resource management, water supply and management. More globally, EGS are already needed increasingly for energy-efficient buildings, sustainable transport and renewable energy.

Developed countries are proposing to bring down tariff barriers on EGS in order to broaden their spread. However, developing countries are reluctant to make such commitments given their concerns that such a process could end up liberalizing far more goods than just those with an environmental end use. There is also concern regarding the competition local industries would face. However, the contrasting positions between developed and developing countries are changing with the emerging economies increasingly becoming the new producers and exporters of EGS. While the debate on the opportunity and extent of liberalization of EGS is not settled, it is clear that sustainable ways for exploiting EGS can and should be part of the drive towards a green economy.

E. LIBERALIZATION OF PUBLIC ENVIRONMENTAL SERVICES

As the transition towards a green economy takes place, economic agents will need to get the right price signals in order to become willing to adopt an ecosystem-based approach to development. The liberalization of public environmental services can increase FDI inflows, technology transfer and public/private partnerships (outsourcing), in addition to promoting R and D, innovation and customization.

Under the right conditions, the privatization of such environmental public services as water supply and sanitation and sustainable transport is expected to achieve the following: (a) yield economic spillovers by increasing demand for local capital, local inputs, and locally-sourced services and generate employment opportunities, including through the creation of new SMEs; (b) reduce costs for consumers resulting from increased efficiency; (c) improve range and quality of services offered; and (d) free up Government budgets for other expenditures.

However, EGS liberalization could also have the following adverse effects: (a) fail to generate the desired spillovers effects or employment opportunities if commitments and obligations are too loosely structured; (b) result in higher costs to consumers for environmental services;⁸² (c) increase unemployment and the need for retraining owing to employment dislocations and streamlining of redundant utilities workers; and (d) displace emerging national firms that are unable to compete with multinationals from participating in the sector.

In sum, gradual and measured liberalization and support measures are needed to avoid undesired social consequences and allow local service suppliers (and associated environmental goods providers), especially SMEs, to benefit from new market opportunities.

In the Arab region, such public environmental services as sewage, water treatment and distribution, and refuse disposal infrastructure are State-owned projects. In these cases, liberalization could require privatization as a first step and this would require proper timing and sequencing. In addition, the region needs to establish regulatory as well as competition and enforcement capabilities for the private sector. In general, situations vary from one country to another. The small size of some national environmental service markets favour public-private sector partnership approaches to privatization and/or regional or subregional schemes, followed gradually by liberalization as national firms may not otherwise materialize.

⁸¹ ESCWA, *The Liberalization of Trade in Environmental Goods and Services in the ESCWA and Arab Regions* (E/ESCWA/SDPD/2007/WP.1).

⁸² The private sector participation requires regulatory oversight to ensure equity and universal accessibility to essential basic services. By contrast, State-owned utilities operate based on welfare considerations, rather than purely on profit or cost-recovery basis.

F. TOURISM

With 5 per cent of world GDP and 6-7 per cent of total employment, tourism represents a vital component of the global economy. In many countries of the Arab region, it contributes significantly to the balance of payments. In Jordan and Morocco, tourism revenues are the second largest source of foreign exchange. While the current financial crisis has slowed down tourism, it still produces 5 per cent of the carbon emissions in the world and is often seen as a major source of biodiversity loss, pollution, degradation of landscape and high water consumption. Moreover, only a small portion of total tourist expenditures is captured by the poor.

These negative trends can be reversed and tourism can be a powerful catalyst for a transition to green economy. The UNEP model estimates that if 0.2 per cent of global GDP is invested each year in greening the tourism sector, it could continue to grow in a stable fashion for decades to come by contributing to economic growth and employment while ensuring significant progress for the environment. This translates into reducing water consumption by 18 per cent, energy consumption by 44 per cent and CO₂ emissions by 52 per cent, compared to the scenario of maintaining the status quo.

The conservation of biodiversity is central to eco-tourism development. For example, Jordan developed its National Biodiversity Strategy and Action Plan in 2003, which gave a major boost to the country's eco-tourism sector. The Strategy recognizes land, water, pasture, terrestrial and marine ecosystems as well as wildlife and aquatic resources as critical resources both for agriculture and tourism development and, consequently, for socio-economic rural development as a whole.

The movement towards more sustainable tourism could increase employment and revenues for local communities, meet the new demands of consumers who are looking for more environmentally friendly journeys, increase the competitiveness of tourism businesses and significantly reduce their operating costs. Box 4 includes an example for greening the hotel industry.

Box 4. Case study of a green investment in the hotel industry and return on investment

Six Senses Resorts and Spas, which is a luxury hotel group, reported that the return on investment of various energy-saving measures for one of their hotels in Thailand ranged from six months to a decade, as follows:

- The energy monitoring system cost US\$4,500, enabling the hotel to achieve energy savings of 10 per cent as well as to identify areas for potential savings;
- Investment for the mini chiller system was US\$130,000, which can make savings of about US\$45,000 annually, and thus pays off after 2.8 years;
- The heat-recovery system cost US\$9,000, saving US\$7,500 annually, which is equivalent to 1.2 years payback time;
- The laundry hot-water system cost US\$27,000, saving US\$17,000 annually and equivalent to 1.6 years payback time;
- Efficient lighting cost US\$8,500, resulting in US\$16,000 savings per year, representing a payback time of six months (this does not factor in the additional savings owing to the longer lifespan of the bulbs);
- Investment in a water reservoir was US\$36,000, leading to annual savings of US\$330,000 (less than a month payback time);
- Biomass absorption chillers cost US\$120,000 resulting in US\$43,000 saving annually, which is equivalent to 2.8 years payback time;
- Medium voltage (6.6kV) underground electric copper cables cost US\$300,000. Payback is approximately 10 years from lower energy loss, but other benefits include less radiation, less power fluctuation and reduced fire risk.

Source: UNEP, "Tourism: Investing in energy and resources efficiency" (2011), available at www.unep.org/green_economy/portals/88/documents/ger/GER_11_tourism.pdf.

G. PROTECTING ECOSYSTEMS

The role of ecosystems in developing a sustainable green economy, notably by supporting agriculture and rural livelihoods, cannot be overemphasized. Carefully designed response policies for climate change present an opportunity to get the valuation process right by investing in both adaptation and mitigation. Adaptation based on ecosystems can help to lead to societal transformational change. Moreover, embracing and capturing economic values of ecosystem services by mainstreaming decision-making tools and indicators can help in designing effective policies for sustainable growth and societal well-being. There is a vital need to invest in a new development model using small-scale fiscal stimulus that mobilizes the untapped potential of local people, thereby unleashing a low carbon green economy. The current economic model driving the world economy is not sustainable, so there is a need for a new approach to economic development where ecosystems are the underpinning foundations. Box 5 presents a case study on the importance of fisheries and aquaculture and their relation to protecting biodiversity in the Mediterranean Basin.

Box 5. Protection of fisheries in the Mediterranean Basin

Fisheries contribute positively to food security, income and employment generation in a number of Arab countries, notably Algeria, Egypt, Oman, Morocco, Tunisia and Yemen. In general, the total fish production in the Arab region was an estimated 3 million tonnes per year in 2003, increasing to 3.4 million tonnes in 2009. While aquaculture production is relatively small, it has been significant in Egypt with total production of over 700,000 tonnes in 2009. However, the fisheries sector in the region faces a number of serious threats, including overfishing and land-based water pollution from the discharge of untreated wastewater into rivers and coastal environments.

Under a green economy, the challenge would be to find the right balance between regulating and limiting fishing activity for the purpose of protecting fish stocks and biodiversity, while maintaining or even increasing the share of the industry in the economy and other social benefits.

During the past decade, a number of projects have been implemented in the Mediterranean Basin under FAO leadership, all of them following an integrated and regional cooperation approach. For example, one of the achievements of the CopeMed project was making available hitherto scarce or partial scientific and statistical information on artisanal fisheries in the countries of the project, namely, Algeria, France, Italy, Libya, Malta, Morocco, Spain and Tunisia. By doing so, it became possible to implement the right national and regional activities for improving socio-economic benefits from small-scale fishing in a sustainable way.

Source: FAO, CopeMed project website, available at www.faocopemed.org/.

H. CONSTRUCTION

The green construction sector represents tremendous opportunities in the whole region. The demand for Government as well social service buildings is extremely important and it has already been the driver for economic growth in many countries (see box 6 for Morocco's experience).

This sector has one of the highest multiplier effects on employment as well the creation of SMEs, given the importance of subcontracting activities in construction. This will become even more so as norms and standards for energy-efficiency and security start to become more dominant in the sector. The increase in demand for green building components and energy-efficient equipment will stimulate green manufacturing jobs.

Many of the jobs are likely to be local opportunities, which is especially beneficial for developing regions and areas of high unemployment. Moreover, given that buildings are responsible for 40 per cent of primary energy consumption, greening existing buildings and constructing new green buildings will

substantially reduce energy use and air pollution. Box 6 highlights selected examples of green building and housing in the Arab region.

Box 6. Selected examples of green building and housing in the Arab region

(a) *Morocco*

With the support of United Nations HABITAT, Morocco has implemented one of the world's most successful and comprehensive slum reduction and improvement programmes. In a concept already being replicated in Egypt and Tunisia, the Moroccan programme is widely considered the best of its kind in Africa and is spearheading Morocco's Cities without Slums drive.

The Government had set a target in 2004 of humanely clearing the slums in 85 cities by 2012. Working with the Ministry of Housing and Urban Development and its agency, Al Omrane, over the past decade it has improved or eliminated 45.8 per cent of the country's slums which are home to 1.6 million people. The cost of the programme has so far amounted to some US\$2.86 billion) of which the Government has allocated US\$1.1 billion.

(b) *Saudi Arabia*

Traditional architectural concepts have allowed early populations in Saudi Arabia to sustain the heat of the desert. Inspired by this indigenous knowledge, new buildings in Saudi Arabia, such as the King Abdullah University of Science and Technology, are reapplying these designs and supporting them with innovative ideas to achieve high energy efficiency.

These innovations include the following: (a) maximizing the use of natural daylight in order to reduce the need for electric lighting inside the buildings; (b) using natural ventilation towers to facilitate air movement and channel hot air out of the buildings, thereby reducing the need for electrical cooling; and (c) constructing a very large roof that connects all the university buildings on campus. While the roof shields the buildings from the harsh sun rays, it also hosts solar thermal and photovoltaic arrays that harness this renewable source of energy for electricity generation.

(c) *United Arab Emirates*

Mubadala, which is a public joint stock company within the Government of Abu Dhabi, established Masdar in 2006 as a commercially driven investment enterprise in the renewable energy and sustainable technologies industry. Masdar operates five units, one of which is Masdar City, a 6 km² clean technology industrial cluster that is expected to host hundreds of businesses as well as a research university. Masdar strives to offer a model for sustainable urban development, notably in terms of energy and water management practices that will be adopted.

In terms of energy, Masdar City will manage consumption through the application of stringent insulation and low-energy use lighting and appliances measures, in addition to the use of smart energy management systems for optimizing electrical load. As such, the City is expected to require much less energy compared to a traditional town with the same size. On the supply side, only renewable energy will be used, whether from onsite or offsite sources, with a 10 MW solar photovoltaic plant already operational and connected to Abu Dhabi's power grid since April 2009.

In terms of water, Masdar City strives to reduce its consumption by half compared to a city of equal size by using water efficient appliances, installing smart water metering devices and recycling water in irrigation. Once complete, Masdar City will serve two roles, namely economic in that it will boost the development of a clean technology industrial cluster that will give Abu Dhabi a competitive edge in global energy markets and; scientific in the development and dissemination of renewable energy and clean technologies.

Sources: For Morocco, United Nations HABITAT, "Best practices", available at www.unhabitat.org/list.asp?typeid=2&catid=277; for Saudi Arabia, King Abdullah University of Science and Technology (KAUST), "Sustainable development", available at www.kaust.edu.sa/about/sustainable/sustainable.html; and for the United Arab Emirates, Mubadala, "Masdar", available at mubadala.ae/about/.

I. TRANSPORTATION

It is estimated that transportation of all types is responsible for around 39 per cent of energy-related greenhouse gas emissions in the Arab region, with the fastest-rising carbon emissions of any economic sector. With significant reliance on cars and trucks and, increasingly, airplanes for both passenger and freight movement, transportation constitutes one of the highest consumers of fossil fuels and a big contributor to climate change.

Buses, trams and railways use far less energy per passenger or freight per kilometre than road vehicles, while helping to reduce traffic congestions and providing affordable transportation means for all segments of society. In addition, many opportunities for greening the transportation sector exist through the introduction of cleaner fuel options. From Cairo's green cabs to Rabat's tram, countries in the region are seizing this opportunity and are making strategic investments to build and upgrade rail networks, integrating high-speed inter-city lines with regional and local lines. These investments in green infrastructure can also lead to substantial expansions in green jobs across the Arab region. Box 7 presents case studies from Egypt and the United Arab Emirates on sustainable transport and cleaner fuel vehicles.

Box 7. Sustainable transport and cleaner fuel vehicles

(a) *Egypt*

In 1994, Egypt established its first company for converting vehicle engines to compressed natural gas (CNG); and in less than five years, the number of such companies rose to six. In addition, around 114 stations were built that sell CNG. As a result, the number of gas-powered cars reached 119,000, 79 per cent of which are taxis. To support the shift to natural gas, Egypt put into place an array of incentives, including tax exemptions for companies that operate natural gas vehicles, subsidizing conversion cost for car owners, as well as reducing gas market price compared to gasoline.

(b) *United Arab Emirates*

As part of its policy to improve public transport, reduce traffic congestions and reduce greenhouse gas emissions linked with the use of private cars, the Roads and Transport Authority of the Government of Dubai established the Dubai Metro in 2009, which is powered by clean electricity. The two lines, namely, the Red Line and Green Line, spans 52 km and 22 km, respectively. Statistics for 2010, when only the Red Line was operational, indicated that 140,000 passengers took the metro every day.

Sources: ESCWA, "Transport for Sustainable Development in the Arab Region: Measures, Progress Achieved, Challenges and Policy Framework" (E/ESCWA/SDPD/2009/WP.1); and the Government of Dubai, "Welcome to the Rail Agency", available at www.rta.ae/wpsv5/wps/portal/Rail?SwitchToLatestLocale=true.

J. WATER PROVISION

Using water more efficiently is a top priority across the world and, more critically, in the water-scarce Arab region. In addition, opportunities exist for increasing non-conventional water sources whether for potable or non-potable uses, such as landscape irrigation, makeup water for cooling towers and toilet flushing.

In order to benefit from these opportunities, improved R and D and innovation in the region is needed to adapt water use efficiency and/or water treatment technologies to local conditions (see boxes 8 and 9). In addition, laws and regulations are needed to ensure that health and safety standards are observed through the use of these technologies. Examples of available technologies include the following:

(a) Gray water collection and reuse, including wastewater from clothes washers, showers, bathtubs and lavatory taps; evidence from North America suggests this is costly in the short term, but with the return on investment showing in the medium to long term;

(b) Rainwater harvesting experiences exist in the region and have been giving positive results, particularly in rural settings;

(c) Air conditioner condensate reuse experiences are giving good results in North America and deserve attention in the GCC countries where air conditioners are widespread;

(d) Treated wastewater is being used increasingly in large buildings and cities around the world and deserves attention in the Arab region;

(e) Desalination is already widely used in GCC countries and being considered by other countries in the region. The environmental effects of this technique need to be handled with a lot of attention as the consequences on marine life have proven to be very negative.

Box 8. Water metering and saving devices in the GCC countries

In the GCC subregion, the provision of municipal water to a growing and more demanding population is a critical issue that comes at a very high cost associated with unsustainable water desalination practices. While GCC countries are still largely subsidizing water tariffs and sending the wrong price signal, water use efficiency and conservation measures have been taken in some countries, such as in Bahrain and the United Arab Emirates, through the introduction of water metering and water saving devices.

In the United Arab Emirates, water saving devices were distributed free of charge to 55,000 households and 5,250 public institutions in 2010. This constitutes a simple action that is expected to have a tangible impact on reducing water consumption by as much as 30 per cent. In Bahrain and since early 2000, water use metering is computerized and as such leaks and/or misuse can be detected and addressed early through properly trained personnel.

Sources: Absal, R., "Free water saving devices for UAE homes", *Gulf News* (13 January 2010); and Qamber, M., "Water demand management in Bahrain" (Ministry of Electricity and Water in Bahrain), which was presented at the Regional Conference on Water Demand Management, Conservation and Control (Amman, 7-10 October 2001).

Box 9. Water harvesting for drinking in small villages in India

India has tapped into the benefits of rainwater harvesting in an attempt to resolve recurrent water scarcity problems in six of its villages with a total population of 10,000 people. An innovative technique was adopted through what has become known as the "Aakash Ganga" (literally meaning "river from the sky") initiative, which was launched in 2003 and won the World Bank's Development Marketplace Award in 2006. The technique consists of channelling the rainwater accumulating on rooftops using gutters and pipes to a network of underground reservoirs for storage and subsequent use during the dry season.

The innovation of the initiative lies not only in the technique used, but also in the financing mechanism adopted to ensure long-term viability and potential for replication. In this connection, a public-private-community partnership was established whereby initial capital was shared between the Government, the community and private sources. Costs are fully recoverable through water use revenues charged to villagers, which proves the viability of approaches to recognize the economic value of water.

Source: "Aakash Ganga: Saving water for a rainy day", *The Wall Street Journal* (7 July 2009), available at: <http://online.wsj.com/article/SB124697560759705907.html>.

K. SANITATION

Sanitation systems need to be developed in many parts of the region, particularly given their substantial investment potential. Even when sanitation systems exist, too often many threats remain, owing largely to the chemical pollutants that are present in wastewater. There is a need to improve the wastewater treatment to enable re-use in various purposes, including agriculture, urban planning and domestic uses. Promoting hygiene awareness can encourage expansion in wastewater treatment schemes. Low-cost methods in wastewater treatment should be promoted to treat greater amounts of wastewater. Moreover, treatment of wastewater for re-use for various purposes, especially gardening and other domestic uses, could add a non-conventional water resource to augment the available and scarce water resources in the Arab region. There is a need to seek new opportunities besides the traditional, often governmental sources of funding from domestic and external funding by promoting public-private partnerships, promoting SMEs that provide sanitation services and by encouraging other market-based financing models. Box 10 shows a unique experiment in the construction of artificial wetlands at Lake Manzala, Egypt.

Box 10. Biological treatment of wastewater in Lake Manzala, Egypt

Lake Manzala in the northeast Nile Delta region receives anywhere from 25,000 m³ to 50,000 m³ per day of wastewater from surrounding villages, causing a deterioration of the lake's water with severe consequences on human and ecosystem health. In response, the Egyptian Environmental Affairs Agency (EEAA) launched a GEF-funded project in 1999, which was implemented in cooperation with UNDP, to treat wastewater in a cost-effective way. The implementation of this project, which cost US\$5 million and was completed in 2007, involved the construction of a biological treatment facility in addition to a commercial fish farm spreading over 60 acres of land that reuses the treated water.

In addition to the environmental benefits from reduced pollution flow into the Mediterranean Sea and protected diversity and enhanced habitats of fish, birds and other aquatic species, the project exhibited a potential for job creation (notably in aquaculture), and the development of national capacities and competitive edge in the field of wastewater treatment using engineered wetlands. Indeed, the necessary national expertise was developed that enables the replication of the project into other sites in Egypt.

Source: UNDP, "Final Evaluation of the UNDP/GEF Lake Manzala Engineered Wetlands Project" (2007), available at <http://projects.csg.uwaterloo.ca/inweb/getdocument.php?F=5476%7C7fc8502519561c1023f3a28ae295121f>.

L. WASTE MANAGEMENT

As cities grow, waste management becomes an ever-growing and pressing issue. In a green economy, recycling plays an important role in waste management. UNEP estimates that with the widespread implementation of systematic paper recycling in North America, Europe and Asia, the global paper collection rate increased from 24.3 per cent to 45.3 per cent between 1970 and 2004. Recycling is the fastest growing source of green employment and offers the greatest opportunity to create new green employment in the waste management industry (see boxes 11 and 12).

Unfortunately, in many developing countries, recycling is associated with indecent and hazardous working conditions. This is the case of dustmen and recyclers in many large cities across the Arab region; of ship dismantling, the bulk of which is carried out by thousands of migrant workers in South Asia; and of the growing amount of electronics waste, most of which is disassembled in small workshops where safety and environmental rules are mostly non-existent. However, there are recycling methods for everyday products, including paper and garbage, which provide decent jobs while making important contribution to reducing energy consumption and associated pollution of air and water. In the United States alone, the number of recycling jobs amount to more than one million.

Box 11. Public-private partnership for municipal solid waste management in the United Arab Emirates

The Government of the United Arab Emirates has adopted a public-private partnership model for the management of municipal solid wastes, thereby creating important opportunities for private businesses to enter the sector. As a result, the number of large municipal solid waste management companies in the United Arab Emirates reached 12 in 2011, with companies having mixed local and foreign origins. The spillover potential for SMEs has been important given that many related activities were outsourced to smaller local companies, notably in the manufacturing and distribution of recycle bins, collection of recyclables and advertisement services for recycling. This has had a positive impact on job creation in the sector.

A number of supporting Government policies were the driving force behind the development of the sector, including as follows:

(a) Awareness and education programmes: For example, programmes were launched in Sharjah and Abu Dhabi to educate the community on the benefits of proper segregation inside the household;

(b) Appropriate infrastructure: For example, waste transfer stations and recovery facilities were set up across Abu Dhabi and Al Gharbia with the objective of reaching 75 per cent landfill diversion by 2020;

(c) Waste collection: A federal law on waste collection, handling, disposal and recycling across the United Arab Emirates was passed in 1999, with clear guidelines to be followed by waste management companies. Since then, this law has been complemented by laws at the Emirate level;

(d) Green building codes: To obtain construction permits, new buildings have to receive a sustainability rating, which, among others, assesses a building's performance in terms of the management of recycled materials and different types of waste (construction, organic and hazardous waste).

Source: ESCWA, "Environmental Goods and Services in the ESCWA Region: Opportunities for Small and Medium-Sized Enterprises" (2011).

Box 12. Industrial ecology in Denmark

Industrial ecology is a concept that became popular in the 1990s, according to which industrial activities are fashioned to mimic natural ecosystems, such as one industry's by-products constitute another industry's raw material input. According to this concept, both economic and environmental gains can be achieved, and the cost of compliance with environmental regulations is greatly reduced.

In Denmark, industrial ecology has successfully been applied in the city of Kalundborg, where six companies established in an eco-industrial park cooperate with each other and with the municipality of Kalundborg and neighbouring industries to reduce waste. In this park, waste from one company is sustainably consumed as a resource by another business. For example, a coal fired power plant operating in the park produces gypsum as a by-product from the desulfurization process, which it sells to a plasterboard product manufacturer also located in the park. In addition, excess heat from the power plant fulfils the process steam needs of two companies (specializing in pharmaceutical and enzyme production). In another example, wastewater from the different companies is treated by the municipality and is used as process water (notably as cooling water) by the park's tenants, while the biomass produced from the wastewater treatment process is sold to a fertilizer company.

Source: The Kalundborg Centre for Industrial Symbiosis, "Resources", available at <http://en.symbiosis.dk/resources.aspx>.

M. AGRICULTURE

Agriculture is an important sector that has great potential for greening economies given both its share of GDP and, moreover, the fact that it accommodates the highest proportion of labour force compared to other sectors in the Arab region.

There are various good opportunities for green investment in the agricultural sector. These include the reduction of post-harvest losses by improving storage and transport facilities, value addition by processing harvested produce, increase in production of organic fertilizers and biological and integrated pest control methods, and green banks and micro-credits for farmers and SMEs.

The future of the agricultural sector as a whole is a subject of controversy in the Arab region. Despite its relative importance in national GDP and employment aggregates, the debate on food sovereignty, food security and virtual water costs of agriculture is not settled. Some argue that sovereignty depends on the capacity of countries to produce the food needed by its people and, as such, the agricultural sector must remain important and encouraged. Others claim that agricultural practices are not sustainable in the region at least because of their unsustainable water consumption in the light of water scarcity and shortages characterizing the region. They argue that agricultural products should be imported, which is politically unacceptable by Governments as well as the public at large in the Arab region.

If green jobs and investment are to be developed in the sector, this will require a long-term commitment from policymakers as well as from society as a whole to the preservation of agriculture as a strategic sector. Only then will farmers find it profitable to engage in sustainable farming practices. Green agriculture case studies in Morocco and Uganda are shown in box 13.

Box 13. Examples of green agriculture in Morocco and Uganda

(a) Morocco

In 2008, Morocco adopted its Green Morocco Plan for agricultural development. The comprehensive Plan seeks to support a sector that not only provides 19 per cent of GNP but also employs more than four million rural inhabitants, in addition to the potential opportunities in the agro-food industry. One major pillar of the Plan is based on the principle of aggregating agricultural production for resolving financial, structural and technical obstacles facing the development of the sector. In addition, the Plan sees the sustainable management of natural resources used in agriculture as a condition for sustainable agricultural development.

As such, a multidisciplinary approach is pursued that focuses on the following: (a) integrating climate change considerations throughout the Plan; (b) encouraging water conservation practices through various mechanisms (economic incentives, new technologies, management practices, etc.); (c) supporting renewable energy use in agricultural production; and (d) land management and conservation practices for increasing agricultural area.

(b) Uganda

The experience of Uganda with organic agriculture is well documented in the literature as a green economy success story whereby the sector was able to contribute to sustaining rural livelihoods. In order to turn the export of organic agricultural products into a major contributor to the economy, Uganda's approach focused on the adoption and effective implementation of organic agricultural standards; and a dual path was followed whereby both a national standard (in 2004) and a regional East African standard (in 2007) were encouraged. As a result, Uganda was able to quadruple the number of certified organic farmers in just five years, while increasing the value of organic exports by more than six times to more than US\$22 million 2007/8. More recently, in 2009, Uganda developed a national organic agriculture policy to transform its conventional agricultural production, which is expected to build on previous successes.

Sources: Agency for Agricultural Development, "Green Morocco Plan", available at www.ada.gov.ma/en/Plan_Maroc_Vert/plan-maroc-vert.php; and UNEP, "Green Economy: Developing countries success stories", available at http://www.unep.org/pdf/greeneconomy_successstories.pdf.

V. PREREQUISITES FOR THE TRANSITION TO A GREEN ECONOMY IN THE ARAB REGION

A. POLICIES, GOVERNANCE AND MAINSTREAMING GREEN ECONOMY PRINCIPLES IN NATIONAL DEVELOPMENT PLANS AND REGIONAL AGENDAS

The transition to a green economy requires a new set of legislation, taxation and subsidy schemes; a commitment from policymakers to mainstream green economy principles in national development plans and in regional agendas; and a modern vision in the governance of development processes. Countries in the Arab region have already been setting legislative frameworks for sustainable development. Weaknesses are reported in the governance of development programmes, in the capacity and/or willingness to apply legislation, and in the inter-ministerial coordination of sustainable development plans.

A major instrument in the effective governance of green activities relates to the institutionalization of monitoring and evaluation schemes at all stages of project definition, implementation and follow-up as well as to the timely publication and diffusion of the results of these evaluations. Passing legislation that requires environmental and socio-economic impact assessments for any development project is a related issue. Experiences from across the world show that there is no way around such practice/pilot projects to have the expected impact. Moreover, these schemes have proven to be very efficient in establishing regional and international partnerships and in mobilizing financial resources.

B. PRIVATE SECTOR INVOLVEMENT

The transformation to a green economy will require changes in how business is conducted. So far, taking into account sustainable development in business has been largely limited to social responsibility. It is now widely accepted that businesses must incorporate social and environmental concerns in their activities. However, the green economy paradigm is also about market opportunities and sources of funding offered by developing sustainable businesses. Thanks to the green economy, the private sector, whether operating in industry, agriculture or services, can diversify and expand the boundaries of its activities. There is a definite case for robust investment in green activities, particularly given that these industries are expanding at a time when so many others offer fewer investment opportunities.

The modern entrepreneur must move from a defensive attitude where the role of business in sustainable development is limited to its social responsibility to a proactive attitude where the company benefits fully from the opportunities of sustainable development. School programmes and university degrees need also to adapt in the light of this new vision. Moreover, Governments and professional associations can play an important role in facilitating this transformation by helping young entrepreneurs to take full advantage of niche markets and financial resources offered by today's green economy.

Moving towards a green economy will definitely require new regulation of the private sector. Such regulatory mechanisms as limits to pollution and emissions, pesticides in food, water contamination, and use of environmental taxes and fines will be crucial policy instruments that should be major or central components to promoting the green economy.

C. STRENGTHENING THE ROLE OF CIVIL SOCIETY AND ENCOURAGING PARTNERSHIPS

Achieving a green economy is only possible through “a collective vision, creativity, action and support from a broad cross-section of society, including governments, the private sector, multilateral development and financial institutions and consumers”.⁸³ Moreover, a chief objective of green economy initiatives is to benefit major components of civil society, particularly youth and women. Involving all components of civil society from the early stages of such initiatives is therefore essential for their success.

⁸³ UNEP, 2010. Green Economy Initiative, available at <http://www.unep.org>.

It is essential to promote the convergence of public interest with private commitment and leadership in determining strategic green economy activities. Many opportunities offered by green economy will require large investments and the concerted involvement of Governments, researchers, the private sector, civil society as well as the international community.

Policymakers, with the support of ESCWA and others, have the responsibility for initiating partnerships at national, regional and international levels in order to facilitate the mobilization and maximize the required investment and know-how.⁸⁴ It is only through successful partnerships that ambitious green projects can succeed as developed throughout this study.

D. ACCELERATING REGIONAL INTEGRATION AND IMPLEMENTING THE GREATER ARAB FREE TRADE AREA

The transition towards a green economy requires an expanded industrial base that benefits from economies of scale and easy access to markets. This cannot be achieved without the accelerated integration of the economies in the Arab region. The economic rationale for integration is clear and attractive. Common markets that integrate small and fragmented economies generate economies of scale and improve competitiveness. So far, no country has found an effective alternative to regional integration to achieve these objectives.

A significant driver of the economic integration of ESCWA member countries is the expansion of interregional and intraregional trade which boosts growth rates, allows a higher degree of inter-ESCWA specialization, and improves the allocation and distribution of resources in the region.⁸⁵ The move towards the Greater Arab Free Trade Area (GAFTA) can start with subregional settings; and the GCC countries are already making significant progress in that regard. The process is slower in the Maghreb, despite evidence that intraregional trade could be multiplied by 10, which would result in an increase of 33 per cent in subregional exports and boost growth rates by 2 to 3 percentage points.⁸⁶

The move towards regional integration in the Arab region must address three issues, namely with whom to integrate, how to differentiate from the rest of the world and how far to go in the integration process. Currently, many countries in the region are signing association agreements with the European Union. In this case the question is no longer to determine the degree of differentiation of the Arab region against the rest of the world, but rather whether individual countries or subregional blocks must gradually blend into a broader concept of a Euro-Mediterranean zone. A more desirable alternative would be that the Arab region builds on its historical, geographical and economic ties with Europe but by negotiating partnerships with the European Union as a coherent regional bloc (or a set of subregional blocs) that are unified and powerful enough to negotiate mutually fruitful Euro-Mediterranean partnerships.

Many green economy projects, including energy interconnections, renewable energy industries as well as establishing research and innovation networks, can be the initiators of Arab accelerated regional integration and cannot take place without such integration. In the energy sector, the region can build upon decades of efforts aimed to strengthen regional cooperation, particularly for electricity. Expansion of the

⁸⁴ At a national level, these partnerships encompass the private sector, civil society, academia and local authorities; at a regional and international level, the partnerships involve other countries, regional economic communities, and the United Nations and other global institutions.

⁸⁵ ESCWA, *Assessment of Trade Policy Trends and Implications for the Economic Performance of the ESCWA Region* (E/ESCWA/EDGD/2009/1).

⁸⁶ Economic Commission for Africa (ECA), 2007, *Forum for Development in North Africa: Trade for growth and job creation – Concept and Introductory Paper*.

electricity networks can constitute a strategic investment that can achieve economic integration among Arab countries.⁸⁷ The case for improved integration in R and D is developed in the following section.

E. ARTICULATING INNOVATION AND RESEARCH AND DEVELOPMENT SYSTEMS

The number of researchers in the region has been growing at an annual rate of 6-7 per cent, which is close to the world average. However, expenditure on scientific research as a percentage of GDP is around 0.2 per cent against a world average of 1.4 per cent (reaching 4 per cent in Japan for example). Research and innovation needs improvement as evidenced by the low number of patents in the region. The sustainable development framework and empirical evidence from across the world indicate without any doubt that R and D is a major ingredient of growth in a knowledge economy.⁸⁸ In the Arab region, this can be achieved pending three underlying principles, namely:

- (a) The existence of the necessary linkages between research institutions and the private sector;
- (b) The acknowledgment of the importance of regional cooperation. Research is costly and complex, and no single country can face by its own the quantitative or the qualitative challenges of R and D promotion; and there is no single Arab country that has reached the critical mass of research needed to sustain its development process;
- (c) The emphasis on actors and/or vectors of performance, namely SMEs, youth and women and their innovative spirit and the competencies of the Arab diaspora.

Improved regional R and D cooperation for a successful transition to a green economy can take the form of the following: research networks; shared infrastructure; increased regional meetings aimed to seek common solutions to common problems; inventories of what exists in order to avoid duplication; and capacity-building on how to achieve regional cooperation by operationalizing appropriate regional mechanisms, seeking funds in common and taking advantage of economies of scale.

Policymakers have a particular responsibility in creating the appropriate environment for this setting in terms of both investment and necessary legislative framework to protect intellectual property and norms, thereby achieving international scientific standards.

F. IMPROVING EDUCATION AND PROMOTING VOCATIONAL TRAINING AND RETRAINING PROGRAMMES

Education and all forms of training constitute both an opportunity and a prerequisite in a green economy context. A transition to a green economy creates demand for workers, many of them in skilled trades or professions; and filling these positions will require adequate training programmes. As countries of the region are seriously considering reforms of their educational systems, they need to address the “skills gap” that exists between available workers and the needs of green industries.

At higher educational levels, there is a “management challenge” that encapsulates the need to develop new perspectives, awareness and managerial capacities. Programmes are needed to train new managers with a new vision moving the corporate attitude towards sustainable development and the full benefits that companies can reap from the opportunities offered by green economies. School programmes and university degrees need also to adapt in the light of this new vision. A good example of a green skills agreement is the one that has been developed in Australia, as shown in box 14.

⁸⁷ This issue was raised during the Expert Group Meeting on the “Role of Energy Networks in Regional Integration” Beirut, 22-23 December 2009 (E/ESCWA/SDPD/2009/WG.4/1), (in Arabic).

⁸⁸ Economic Commission for Africa (ECA), 2008, *Expert Group Meeting on Promoting Research and Development in North Africa: Presentation Note*.

Box 14. The Green Skills Agreement in Australia

Australia tackled the challenge of green jobs creation through a national skills development strategy, namely the Green Skills Agreement, which was adopted in 2009 and aimed to make available the skilled workforce needed for the development of a green economy. The strategy covers a number of sectors, including construction, energy, manufacturing, agriculture and various services. Focusing mainly on vocational education and training (VET), the strategy entails upgrading the skills of VET teachers and the review of training packages to include sustainability practices. In the process, partnerships are forged with training institutions and the business sector. Currently, there are 1.7 million VET students in Australia every year.

Source: Department of Education, Employment and Workplace Relations (DEEWR), “About the Green Skills Agreement”, available at www.deewr.gov.au/Skills/Programs/WorkDevelop/ClimateChangeSustainability/Pages/GreenSkillsAgreement.aspx.

As UNEP indicates, remedying such shortages requires not only adaptations in training new workers, but also retraining efforts for those workers for the transition from older, polluting industries to new ones. The United Nations agencies have a particular role to play in this area in partnership with businesses, professional associations and community organizations. In all countries, it is important to link green subsidies, tax breaks and other incentives provided to companies with job quality and training standards.

G. TECHNOLOGICAL TRANSFER AND NEW FINANCING ARRANGEMENTS

The constant development, diffusion and access to green technologies represent a pivotal issue for green economy. Among the possible vehicles for boosting R and D in the green sector are the promotion of innovative public-private partnership, cooperative R and D centres and new financial mechanisms aimed to expedite the spread of green technologies. In order to be effective, technological transfer needs to be dynamic and premised on concrete cooperation between Government, academia, research and the private sector.

In terms of dynamism, many SMEs are playing a pioneering role in innovation, especially in the renewable energies sector. They have realized that green innovation helps business to stay at the cutting edge and can also support in reducing wasteful practices. The virtuous consequence for these companies is that they can play a leadership role in the marketplace by expanding sales and revenues. In terms of national growth this implies a growth of GDP and employment rates.

New and innovative financing mechanisms have to be conceived as a support for the green economy. The establishment of industrial zones that can facilitate the establishment of green industries can also be promoted through innovative financing arrangements partnered with green investment. This can assist in creating new green businesses and, moreover, encourage existing businesses to relocate to an industrial zone with high environmental performance standards.

VI. INSTITUTIONAL SETTINGS FOR SUSTAINABLE DEVELOPMENT AND THEIR SUITABILITY FOR THE TRANSITION TO A GREEN ECONOMY

A. CURRENT SETTINGS AND EVALUATION

The current institutional sustainable development setting goes back to 1987 when the United Nations started searching for an appropriated framework for governing and applying the sustainable development concept. The 1992 “Earth Summit” in Rio de Janeiro was an important step in this process. It led to the adoption of Agenda 21 Action Plan, the creation of the three framework conventions on desertification, biodiversity and climate change. The United Nations Commission on Sustainable Development (CSD) was tasked with the follow-up of the Rio Summit.

This framework was further supplemented by the Johannesburg Plan of Implementation (JPOI), which was adopted during the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. The Plan renews the United Nations’ commitment to Agenda 21 and defines new priorities for action related to MDGs in the areas of poverty eradication, health, trade, education, science and technology, regional concerns and natural resources. The Plan recognizes that “strengthening of the international institutional framework for sustainable development is an evolutionary process. It is necessary to keep relevant arrangements under review; identify gaps; eliminate duplication of functions; and continue to strive for greater integration, efficiency and coordination of the economic, social and environmental dimensions of sustainable development aiming at the implementation of Agenda 21”.⁸⁹

In line with a major recommendation of Agenda 21, countries defined national sustainable development strategies (NSDS) in order to establish their own sectoral economic, social and environmental policies. The 2002 WSSD urged Member States to formulate and implement their NSDS by 2005. Regional and subregional efforts have also been undertaken by countries in order to coordinate their environmental and sustainable development policies and prepare common visions and statements in international forums.

More locally, Agenda 21 identified major groups as being critical in its implementation. Representatives of indigenous people, women, youth, workers, farmers, local Governments, the scientific community, business and industry, and NGOs participated to the Rio Conference and have since then continuously broadened their involvement in the implementation of Agenda 21.

One of the major achievements of the Johannesburg Plan is that it put emphasis on the institutional framework for sustainable development, particularly the following: (a) institutional strengthening and capacity-building; (b) integrated management and ecosystem approach; (c) legal and regulatory frameworks; (d) partnerships; (e) coordination and cooperation; and (f) accountability and transparency.

At the national level, JPOI states that good governance is essential and should be based on the following: (a) sound environmental, social and economic policies; (b) democratic institutions that are responsive to the needs of the people; (c) the rule of law; (d) anti-corruption measures; (e) gender equality; and (f) an enabling environment for investment.

For the preparation of Rio+20, CSD launched consultations to “seek information, inputs and contributions including through a questionnaire addressed to member States, the United Nations system, international financial institutions (IFIs), major groups and other stakeholders, on their experiences including success factors, challenges and risks with respect to the objective and themes of the Conference”.⁹⁰ Responses to the questionnaire were synthesized and provide the following lessons:

⁸⁹ Department of Economic and Social Affairs (DESA), Division For Sustainable Development, *Johannesburg Plan of Implementation* (United Nations, 15 December 2004), chapter XI, para. 156 (c).

⁹⁰ Synthesis report on best practice and lessons learned on the objective and themes of the United Nations Conference on Sustainable Development, Preparatory Committee for the United Nations Conference on Sustainable Development, 2011.

(a) At the regional level, there are several instances of cooperation between United Nations institutions. The United Nations regional commissions have been coordinating closely to produce joint analyses as an input to the preparations for the United Nations Conference on Sustainable Development. United Nations organizations are working together in Africa to assist the New Partnership for Africa's Development (NEPAD). It was suggested that, while the experience of the regional implementation meetings had been positive, the regional commissions could be further integrated into the CSD process;

(b) At the national level, one Member State noted that the diversity of contexts made any blueprint for the institutional framework neither desirable nor feasible. In most developing countries, coordination of policy development and implementation across relevant agencies remained a challenge. Most countries reported that active national sustainable development councils were in place, and that they included participation of major groups and other stakeholders, although young people were still underrepresented in many cases. Those that did not have a national sustainable development council in place reported on various inter-ministerial coordination mechanisms. It was agreed that involvement of national sustainable development councils in preparations by countries for the Conference would be useful and needed to be promoted;

(c) The overall effectiveness of national sustainable development strategies depends on many factors (economic, social and environmental) and on effective governance within national circumstances. Those that have been effective embody participatory approaches in development and implementation, effectively integrating the different dimensions of sustainable development, and are adequately resourced. National development plans and poverty reduction strategies, linked to budget processes and contextualized within a country's long-term vision for sustainable development, as well as strategically linked to sectoral plans and complemented by subnational plans, could be quite effective;

(d) Often, the scope of a national sustainable development strategy was too narrow, focusing solely on environmental issues. Cultural, political and socio-economic aspects were not always adequately reflected. For example, while all the Pacific Small Island Developing States have a national sustainable development strategy or a planning process that adheres to principles of sustainable development, the five-year review of the implementation of the Mauritius Strategy suggests that the integrated planning process needs improvement. Most national sustainable development strategies in Western Asia have failed to identify the optimum institutional and administrative arrangements needed to coordinate and implement their action plans, which are often not compatible with other sector strategies;

(e) To support implementation of national sustainable development strategies, one Member State suggested the establishment of an independent peer review mechanism, drawing upon expertise from Member States that would help countries to identify gaps and address challenges faced in implementing sustainable development goals and targets;

(f) Subnational and local Governments play a critical role in integrating national sustainable development policies into practical local programmes for urban and rural planning and management, along with fostering community and civil society participation in these programmes. Chapter 28 of Agenda 21 emphasizes the important role of local authorities in promoting sustainable development at the local level. Since 1992, thousands of municipalities across the world have formulated and implemented local Agenda 21 strategies, although they may not always be identified as such, having evolved and refocused their activities under different programmes;

(g) Participation of major groups in national decision-making processes on sustainable development has significantly increased since 1992. Participation in policy development ranked as the most common form of engagement overall, followed by public hearings, partnerships and inclusion in scientific panels. Most United Nations organizations also ranked high on the list the multi-stakeholder consultations for international meetings;

(h) Almost all Member States reported close collaboration with NGOs. Developed countries more often reported collaboration with trade unions, local authorities, business and industry and the scientific and technological community. Developing countries more often cited collaboration with women, indigenous people and farmers. While young people are consulted in fewer instances, they were mentioned by both developed and developing countries, as well as by United Nations organizations. The latter tend to reach out to all nine major group sectors based on the spectrum of their activities, but most often reported collaboration with business and industry or the scientific and technological community;

(i) Major groups generally collaborate with the country or countries of interest to their organization and also reported on collaboration with United Nations organizations and with each other. The increased collaboration among some major groups themselves at the international level is an important development and strengthens their role and voice in international sustainable development institutions.

B. SUITABILITY FOR THE TRANSITION TO A GREEN ECONOMY

In order to achieve sustainable development through the vehicle of green economy the following recommendations are made for reforming the current setting:

(a) At the national level, to intensify efforts aimed to define and implement the action plans of national sustainable development strategies and to coordinate these plans with strategies in other sectors;

(b) At the local level, to increase the involvement of local authorities and civil society in all stages of the definition, implementation and follow-up of development plans;

(c) At the regional level, to establish a peer review mechanism drawing upon the expertise of Member States that would help countries to identify gaps and address challenges faced in implementing sustainable development goals and targets;

(d) At the global level, to achieve more effective coordination between all United Nations bodies, particularly, within the context of the Arab region, in terms of synergies between the three conventions on desertification, biodiversity and climate change given their importance to the region and their strong links to such issues as sustainable consumption and production, green economy, nexus between water and energy, and food security; and to use MDGs to measure progress achieved towards sustainable development and, more importantly, the eradication of poverty;

(e) At all levels, to establish more systematic monitoring and evaluation mechanisms of all actions undertaken.

In order to make these recommendations more relevant for an efficient transition towards a green economy, there is a need for an explicit implication of the private sector in the institutional framework. The place of the private sector in the setting is crucial in order to ensure that investments as well as corporate cultures towards environment and sustainability are in line with a successful transition to green economy.

VII. PROPOSED PRIORITIES AND REQUIRED ACTIONS FOR THE PREPARATION OF AN ARAB STRATEGY ON GREEN ECONOMY

In view of the opportunities, challenges and constraints that influence the costs and benefits of a green economy in the Arab region, the question remains how to define what constitutes a green economic strategy or a green economy intervention in Arab countries. Figure IX illustrates what could be included in the green economy framework.

In framing Arab positions and programmes for a green economy that will benefit Arab countries, care should be taken to ensure the following:

- (a) Consideration and respect for regional specificities and priorities;
- (b) Application of Rio principle on common, albeit differentiated responsibilities;
- (c) Protection against green protectionism;
- (d) Access to financing for green investments across environmental sectors, rather than limited purely to those focused on climate mitigation and low-carbon green growth.

It should be clearly understood that the call for a transition towards a green economy is not an alternative to sustainable development. Rather it is a pathway proposed to accelerate the integration of the social, economic and environmental components of sustainable development. The overall objective remains a reduction of poverty and a better contribution to sustainable development through accelerated green-led economic growth, enhanced social and environmental entrepreneurship and strengthened local capacities. The Arab region needs to reach a consensus on the definition and objectives of green economy as well as on the key sustainable development concerns and priorities of the region, recognizing at the same time national and/or subregional specificities.

Figure IX. Possible constituents of a green economy framework



The transition to a green economy is an ambitious, multi-sectoral process. Success requires a roadmap for transition with a clear timeline and coordinated government efforts. In setting up the vision for the Arab region on the path to a green economy, lessons must be drawn from past experiences and particularly those related to the national sustainable development strategies and the extent to which they had an impact on the region's development.

An explicit component of green growth is that in addition to diminishing the carbon content of existing activities (greening the brown) there is a need for innovative minds to set up and undertake new activities aimed to refocus policies and investment in green economic sectors (growing the green), such as water, urban development, low-carbon transport, renewable energies and energy efficiency, and sustainable agriculture.

This endeavour requires the commitment of all components of society, including policymakers, local authorities, the private sector, academia and civil society, with a particular involvement of youth and women groups. Consequently, a participatory process is an important priority in the transition to a green economy by providing platforms for national as well as subregional consultations on green economy, building partnerships and enhancing synergy with existing strategies, policies and programmes. Arab Governments should take into consideration conceptual frameworks informing the debate at the global level, while ensuring that transition to a green economy takes into account regional and national priorities, issues and constraints.

Effort must also be undertaken to ensure implementing existing regional initiatives agreed upon by the Council of Arab Ministers Responsible for the Environment (CAMRE) in relation to green economy, especially the Sustainable Development Initiative for the Arab Region, which was launched by CAMRE at the World Summit for Sustainable Development (WSSD) in 2002 and aimed at “addressing the challenges faced by the Arab Countries to achieve sustainable development. It asserts the commitment of the Arab countries to implement Agenda 21 and the development objectives included in the Millennium Declaration and the outcome of the World Summit on Sustainable Development, taking into consideration the principle of common but differentiated responsibility. The initiative seeks to enhance the participation of the Arab countries with the aim of strengthening their efforts in realizing sustainable development, particularly in the light of globalization and its impacts, as well as finding a mechanism for financing the programmes for environmental protection and sustainable development”.⁹¹

The Sustainable Development Initiative for the Arab Region is therefore fully consistent with the scope of the thematic discussion that will take place at Rio+20 on a green economy in 2012 in the context of sustainable development and poverty eradication. The Arab region must seek to elaborate on these two components and, particularly, on building mechanisms aimed to increase financing for green investment at the macroeconomic and microeconomic levels.

Green economy activities should also build upon existing programmes or incorporate them into a new framework for action at the regional and national levels. For instance, by focusing on mechanisms for increasing finance and investment in green sectors, those regional programmes that are already underway and that build capacity and action on sustainable consumption and production (SCP), and on trade and environment linkages could be complemented.

Additionally, the Arab region must seek broad and flexible strategies in its move to a green economy in order to allow a wide range of stakeholder groups to benefit from greener economies, as well as to support its implementation. Within this process, the following areas and activities could be considered:

(a) Adopting legislation and regulations to encourage green investments, including environmentally friendly foreign investment and green technology transfer through private sector partnerships and international donor assistance;

(b) Increasing Arab access to financial instruments and mechanisms at the global, regional and national levels with special attention paid to encouraging green investments by the private sector through special programmes targeting SMEs or firms seeking to implement green investment schemes with targets aimed at youth employment and the employment of women and vulnerable groups;

⁹¹ League of Arab States, 2002, *The Sustainable Development Initiative of the Arab Region*, p. 1.

(c) Promoting and encouraging voluntary incentives for pursuing green investments, such as eco-certification schemes for environmental goods and services that recognize superior environmental performance in areas that are of significant concern to the Arab region.⁹²

Boxes 15 and 16 summarize, respectively, the key questions and issues, and the components of a regional position and policy priorities that need to be considered by Arab countries in the transition to a green economy.

Box 15. Key questions and issues in the transition to a green economy

- What is the economic, environmental and social case for moving towards a green economy?
- Does the green economy improve welfare?
- Who are the key players in the region and, at the country level, who can make this happen and what should be their role? What partnership agreements are needed?
- What institutional innovations are required to support these actors?
- What lessons can be drawn from the past experiences related to the national sustainable development strategies and to what extent did they have an impact on the region's development?
- What success stories are available in the region? What was the impact of these cases?
- What kind of ambitious national, subregional and regional projects would move the countries or the region as whole to a definite transition to a green economy and what sort of partnerships at the national, regional as well global levels are necessary?

Box 16. Key components of a national/regional green economy strategy

- Go far beyond the issue of emissions reduction;
- State vision and objectives assigned to green economy transition;
- Recognize role of existing institutions at international, regional and subregional levels;
- Recognize lessons from past sustainable development experiences carried at the national and international levels;
- Provide stable and predictable policy climates that foster green investment;
- Enhance policies that stimulate the more efficient use of all available energy resources and minimize the wasteful use of other critical natural resources such as water, forests, minerals, agricultural lands and air;
- Empower business community to put in place emission-reducing technologies and solutions that create jobs, raise standards of living and address major environmental problems;
- Stimulate the development and deployment of innovative technologies which could provide the basis for green product development;
- Continue to work for greater awareness of the need to adopt lower carbon-intensive lifestyles in both the present and future generations of consumers and workers engaging them to take action for higher education and skills training programmes needed to better prepare future generations of workers for a green economy;
- Ensure coordination and coherence between institutions and the Arab countries;
- Ensure engagement of all relevant stakeholders in the process, including parliamentarians, local communities, the private sector, civil society and academia;
- Support green partnerships at the national, regional as well international levels;
- Encourage increased international support to science, technology and innovation;
- Encourage increased international support to capacity-building.

⁹² This could include, for example, meeting higher water use efficiency targets in water-scarce environments.

VIII. CONCLUSIONS AND RECOMMENDATIONS

Across the world, green economy has been seen recently as an essential vehicle to strengthen and speed up the process of implementation of sustainable development initiatives. The Arab region was hit by the financial crisis as well as climate change and food crises during 2007-2008. There have been global signals that the green economy could provide opportunity to redirect investments into green projects and activities, thereby enhancing long-term economic performance while seeking to reduce environmental risks and generating future prosperity.

The experiences from the Arab region have shown that the green economy model can be adapted to the region and can give positive results in terms of alleviating poverty, reducing unemployment and eventually achieving sustainable development. The recent uprisings and revolutions in the Arab region, which seek to increase democracy and freedom, could help to establish a new business environment that can embrace green economy concepts, particularly in terms of achieving social equity and creating decent jobs to help decrease unemployment.

This study proposes a set of actions for transfer to green economy in the Arab region, including by strengthening the role of the private sector and civil society through partnerships, accelerating regional integration, promoting national education and R and D systems, improving vocational training, and boosting technological transfer and innovation and new financial mechanisms. Of equal importance, green economy principles need to be merged into national development plans and regional policies, and must be supported by good governance system in terms of new sets of legislation and financial instruments. Institutional settings will need reforming at all levels in order to suit the transfer to green economy and improve harmony between sectoral strategies, increase involvement of local authorities and build an Arab regional vision among all countries.

Within that context, an Arab position should be developed that takes into consideration regional specificities and priorities. The transition to a green economy is a multi-sectoral process that requires developing a roadmap and committed efforts by governments and all components of the society, and providing access to financing for green investments across various sectors. The development of an Arab vision towards green economy would provide the political support needed to support its implementation and would facilitate building up a concerted position and common objectives to green economy transition by all Arab countries within the framework of Arab Sustainable Development Initiative launched in 2002. The key recommendations of the study are as follows:

(a) The green economy agenda has a wide scope given that it deals with all socio-economic and environmental aspects. Consequently, it is advisable to initiate green economy activities based on prioritized actions in key sectors that will have immediate and short-term impacts on Arab societies, especially, youth, women and poor and vulnerable groups;

(b) While there are several success stories of Arab initiatives in the green economy context, there is a need to conduct an inventory to collect other best practice and lessons learned in order to document these existing Arab green initiatives and to build on them in other countries in the Arab region;

(c) Promoting green job opportunities in the Arab region within the new atmosphere of transition to democracy in many countries in the region will require serving training needs and skills development in support of innovation, R and D, and the transfer of green technologies from developed countries;

(d) It is essential to empower civil society in the region and to encourage partnerships to boost the momentum of the genuine transfer to greener economies in the region. Special programme and platforms could also be sought for supporting green investment in and by SMEs in view of generating green jobs and income opportunities through greening the economy;

(e) The demand for green economy should be fostered by raising awareness and understanding among consumer groups and civil society. Access to information is one of the primary tools by which consumers can be made aware of the implications of their consumption decisions. In order to achieve this, consumers, community-based organizations and the media are therefore important partners to raise awareness on green economy concepts and principles;

(f) Intensifying capacity-building programmes for public and private sectors on green economy needs to be a priority while stressing the role of United Nations organizations and NGOs in this area;

(g) The success of green economy interventions will depend on building effective public-private sector partnerships that provide bridges between the environmental, economic and financial communities;

(h) The green economy should not be seen purely as revolving around industrial policies or low-carbon activities; rather it should embrace a wide range of policies covering all productive and environmental sectors from the Arab region, including the regulations and reforms required for the transition to a green economy;

(i) In order to strengthen the position and identity of Arab countries in global negotiations meetings, there is a need to adapt Arab initiatives and positions towards the global agenda and to promote full involvement with developing countries in other regions, thereby benefiting from South-South cooperation and advancing regional and joint activities to support the sustainable development in the region;

(j) There is a need to promote international cooperation to support developing countries, especially in the areas of technology transfer, green financing, micro-financing, trade and investments, including the best use of existing climate change adaptation and mitigation mechanisms. The role of the United Nations and its agencies should be highlighted, particularly with regard to supporting the concept of the green economy in Member States;

(k) There is a need to develop regional economic models and modalities aimed to assess the cost and benefits of transition to a green economy, and its potential in promoting economic growth, job creation and poverty eradication in the region; and to develop region-specific and reliable indicators to enable measuring the progress achieved in green economy activities;

(l) Arab Governments must be encouraged to adapt green economy concepts and to create an investment climate that attracts related projects and technologies;

(m) There is a need to create national and regional institutional frameworks to facilitate coordination between all agencies concerned with the transition to a green economy.

Annex I

PREPARATORY MEETINGS FOR RIO+20

A. KEY ARAB REGIONAL PREPARATORY MEETINGS

Activity title	Venue and date	Key findings and outcomes
Twelfth session of the Joint Committee on Environment and Development in the Arab Countries (JCEDAR) – LAS	Cairo, 16-19 October 2010	<ul style="list-style-type: none"> • Arab countries were informed about the conceptual framework for a green economy and regional Rio+20 preparations led by the JCEDAR Technical Secretariat.
Regional Workshop on Trade and Environment: Developing the Environmental Goods and Services Sector in the Arab Region for Transformation into a Green Economy – ESCWA	Beirut, 15-16 December 2010	<ul style="list-style-type: none"> • Review of basic concepts of green economy in particular related to the environmental goods and services sector. • The Workshop called for formulating clear definition and better understanding of the goals of the green economy at the regional and national levels. • Concerns were raised with regard to the emergence of a dual approach, namely, sustainable development and green economy, with the possibility of the latter approach taking precedence over the former. • Any region should specifically ensure that the green economy strengthens sustainable development rather than replacing it. • It was debated whether green economy concepts were to be applied at the macro- or micro- levels given that each level involves different policy implications. • The disparities between Arab countries in terms of key economic and social conditions need to be taken into consideration when a common Arab position is built regarding transition to green economy.
Twenty-second session of the Council of Arab Ministers Responsible for Environment (CAMRE) – LAS	Cairo, 19-20 December 2010	<ul style="list-style-type: none"> • CAMRE took note of the report by ESCWA, UNEP and LAS on the conceptual framework of a green economy, requested the wide dissemination of the report and endorsed an Arab preparatory meeting for Rio+20.

Activity title	Venue and date	Key findings and outcomes
Third Roundtable Meeting on Sustainable Consumption and Production in the Arab Region: Paving the Path to Green Economy in the Arab Region – UNEP/ROWA, ESCWA and LAS	Cairo, 26-27 January 2011	<ul style="list-style-type: none"> • The Meeting showcased best practices, reviewed progress and exchanged views on the needs and priorities of the region to promote the shift to sustainable consumption and production and the transition to a green economy. • It highlighted the nexus between SCP and the green economy with the importance of clearly identifying priority sectors that can lead the process of transfer to green economy.
Expert Group Meeting on Promoting Emissions Reductions in the Transport Sector – ESCWA and ECE	Beirut, 5-6 July 2011	<ul style="list-style-type: none"> • The Meeting recommended the following: <ul style="list-style-type: none"> - To adopt newer technologies and cleaner fuels, especially natural gas; - To implement legislation, specifications and standards necessary to reduce emissions from the transport sector; - To increase incentives for private investment and benefit from international financing mechanisms available to implement the necessary infrastructure projects; - To build national capacities and awareness programmes on information technology and on setting standards for maintenance and knowledge transfer, and establishing appropriate technologies that are consistent with the specificities of each country; - To support scientific research and development and disseminate successful experiences in the field.
Meeting on Economic Policies Supporting the Transition to a Green Economy in the Arab Region – ESCWA, LAS, UNEP and Institut des Finances Basil Fuleihan in Lebanon	Beirut, 20-21 July 2011	<ul style="list-style-type: none"> • The Meeting provided a regional platform for representatives of ministries of finance and other relevant participants to share experiences, knowledge and lessons learned among themselves and with representatives of member countries involved in preparing for Rio+20 on the available options for economic policy reform and financial instruments for transition to a green economy. • It helped to develop concepts of green

Activity title	Venue and date	Key findings and outcomes
		<p>economy and build consensus regarding its potential in the Arab region.</p> <ul style="list-style-type: none"> • It discussed the required reform of economic policies in order to facilitate the channelling of investments into green areas and stimulate a fair, advantageous and timely transition to a green economy in the region. • A joint statement was introduced that identified regional priorities from an Arab perspective for moving towards a green economy in the region and stressed the need to prepare economic and technical feasibility studies for environmental projects to be submitted to financial, economic or planning authorities. • The proposed studies should highlight the financial benefits and costs and advantages expected from the implementation of the proposed project, and whether these benefits/costs were expected within the short or long term. This process could be part of policies that take into account the principles of environmental accounting.
<p>Workshop on Voluntary Sustainability Standards (VSS) to Promote Sustainable Agricultural Production, Food Quality and Safety, Environmental Protection and Trade in the Arab Region – ESCWA, GIZ and the Ministry of Agriculture in Lebanon</p>	<p>Beirut, 27 September 2011</p>	<ul style="list-style-type: none"> • The Workshop reviewed and raised awareness regarding the concept of Voluntary Sustainability Standards (VSS) and its potential contribution towards enhancing market share and market access for products and commodities from the region; and proposed a framework for developing an operational regional initiative that could enhance sustainable agriculture through VSS. • There was a common agreement on the fact that VSS are important for the region and need to be promoted given that they could benefit both producers and consumers while allowing produces from the region not to only access regional and global markets but also to become more competitive on local markets as well.

Conference on the Role of Green	Beirut,	• The Conference discussed the concept of
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Activity title	Venue and date	Key findings and outcomes
Industries in Promoting Socio-economic Development in the Arab Countries – ESCWA, AIDMO, UNIDO, UNEP/ROWA, GIZ and LAS	28-29 September 2011	<p>green industries and the requirements for their promote in Arab countries; international and regional initiatives aimed at reinforcing the “greening” principle in all socio-economic domains; and preparations for Rio+20.</p> <ul style="list-style-type: none"> • It debated economic, social and environmental aspects of adopting green industry policies and techniques. • It encouraged Arab countries to adopt the concept of green industries and develop a common understanding and position regarding priorities to green the industries in the region. • It promoted a larger scale of application of regional and national renewable energy projects. • An action plan on green industries, particularly for small and medium industries (SMIs), was developed as a key outcome of the Conference.
Workshop on Institutional Framework for Sustainable Development in the Arab Region – the Presidency of Meteorology and Environment (PME) in Saudi Arabia, ESCWA, UNESCO and LAS	Jeddah, Saudi Arabia, 3-5 October 2011	<ul style="list-style-type: none"> • The Workshop adopted a set of recommendations at the global, regional and national levels with a view to identifying a clear and common position for the Arab region on the issue of international environmental governance that will be negotiated in the context of Rio+20. • The Workshop called on CAMRE to assist Arab countries in harmonizing their institutional frameworks for sustainable development (IFSDs) with international and regional ones. • It urged those Arab countries that have not yet established an IFSD to do so promptly and in line with the relevant Arab summit resolutions and CAMRE decisions on this matter, and to activate their respective national committees in charge of the preparation for Rio+20 at the national level.

West Asia Regional Consultation	Dubai,	• The Meeting discussed the agenda items of
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Activity title	Venue and date	Key findings and outcomes
Meeting of Major Groups and Stakeholders in Preparation for Rio + 20 and the Twenty-seventh Session of the Governing Council/ Global Ministerial Environment Forum (GC-27/GMEF) – UNEP	United Arab Emirates, 9-10 October 2011	<p>Rio+20 and resulted in a statement and a set of recommendations on the institutional framework for sustainable development (IFSD) and international environment governance (IEG), and green economy, include, among others, the following:</p> <ul style="list-style-type: none"> - To enhance the framework of sustainable development in order to ensure equity and transparency in line with international law; - To ensure the participation of civil society organizations and other stakeholders, and ensure transparency and accountability at all levels (local, national, regional and global), based on principle 10 of Agenda 21 within the global environmental governance system; - To ensure that all significant environmental threats are appropriately addressed; - To emphasize that the green economy emanates from a vision that takes into consideration the specificities of local communities (particularly developing countries) by defining their economic and social development priorities and implementation means.
Regional Multi-stakeholder Meeting in the Arab Region on Rio+20 – Arab NGO Network for Development (ANND), ESCWA, UNEP and LAS	Beirut, 12-13 October 2011	<ul style="list-style-type: none"> • The Meeting was concluded by the formulation of a position statement from Civil Society Groups in the Arab Region within the Rio+20 Process. • During the Meeting, participants highlighted several issues with regard to the green economy and sustainable development, including the following: <ul style="list-style-type: none"> - The need to ensure that the green economy concept does not become a step backwards from the initial commitments to Agenda 21; - The urgency to reevaluate existing policies and trade agreements that contradict the concept of sustainable development; - The need for Arab countries to move away from exclusive focus on

Activity title	Venue and date	Key findings and outcomes
		economic growth towards increased emphasis on economic development.
Training Session for Major Groups in the Arab Region – Arab Network for Environment and Development (RAED), DESA and ESCWA	Cairo, 15 October 2011	<ul style="list-style-type: none"> • The training increased the awareness of major groups and other stakeholders on the themes of Rio+20 and built their capacity to engage with the United Nations and represent their different perspectives in sustainable development conferences and preparatory meetings at the international and regional levels. • It involved the key representatives from various major groups that are engaged in the preparations for Rio+20.
Arab Regional Preparatory Conference for Rio+20 – ESCWA, LAS and UNEP/ROWA	Cairo, 16-17 October 2011	<ul style="list-style-type: none"> • The Conference adopted a set of recommendations that were submitted to the thirteenth session of JCEDAR for discussion and approval, before submission in December 2011 to the twenty-third session of CAMRE (see annex II below). • Among those recommendations is the adherence to the principles of the 1992 Rio Declaration; implementation of the outcomes of the United Nations summits and conferences on sustainable development; and achieving sustainable development by enhancing and integrating its economic, social and environmental pillars. • The meeting report was submitted to the UNCSD Bureau as the contribution of the Arab Regional Preparatory Meeting to the global compilation document for Rio+20 and global preparations for Rio+20.
Thirteenth session of the Joint Committee on Environment and Development in the Arab Countries (JCEDAR) – LAS	Cairo, 18-20 October 2011	<ul style="list-style-type: none"> • The session discussed and endorsed the outcomes of the Arab Regional Preparatory Conference for Rio+20 to be reported to the twenty-third session of CAMRE for consideration in order to come up with an Arab Declaration for Rio+20 in December 2011.
Annual Conference on Green Economy in a Changing Arab World – Arab Forum for	Beirut, 27-28 October 2011	<ul style="list-style-type: none"> • During the Conference, AFED launched the Arab Green Economy report, entitled “Green Economy: Sustainable Transition

Activity title	Venue and date	Key findings and outcomes
Environment and Development (AFED)		<p>in a Changing Arab World”, which advocates development patterns that achieve balanced progress across the economic, social and environmental dimensions, while sustaining natural capital.</p> <ul style="list-style-type: none"> • The report communicates a set of enabling policies for making a transition to a green economy across eight key economic sectors, namely, agriculture, water, energy, industry, transport, cities and buildings, waste management and industry, and in a manner that achieves economic growth, social development and environmental protection. • During a side event, ESCWA and ILO organized a roundtable on green jobs.
Sixteenth Meeting of the Regional Coordination Mechanism (RCM) for Arab States	Beirut, 17-18 November 2011	<ul style="list-style-type: none"> • The Meeting brought together the regional commissions of the United Nations, LAS and other regional development and financial institutions, and civil society representatives in order to discuss the cooperation between United Nations entities and LAS for Rio+20 and post Rio. • It reviewed the outcome of the Arab preparatory process for Rio+20; assessed potential directions and problematic areas in the “Arab position”; and identified the components required for a collective integration into governance of social contract and capacity-building programmes, with a specific focus on youth and civic engagement. • High-level representatives examined possible strategies and partnerships needed for developing practical tools necessary to support governments in the region in terms of moving forward regionally on an integrated approach to sustainable development and green concepts.

* Matrix and links to related event documents can be accessed on <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1570E>.

B. KEY NATIONAL PREPARATORY MEETINGS

Activity title	Venue and date	Key findings and outcomes
<p>Syrian Arab Republic: Workshop on the Transition towards Green Economy</p>	<p>Damascus, 23-25 March 2011</p>	<ul style="list-style-type: none"> • The Workshop discussed the green economy and environmental goods and services (EGS) from the perspective of the Syrian Arab Republic. • It presented an occasion for ESCWA to introduce green economy policies and strategies, and highlight opportunities in the EGS sector in the country. • Issues highlighted during discussions included the following: <ul style="list-style-type: none"> - Technology transfer and lack of expertise as a major handicap preventing the development of a green economy; - The need to work on several tracks simultaneously (legal, economic and institutional, among others) for optimal results; - Avoiding to rush into action until proper analysis and planning were conducted; - Major precautions of a green economy include the high economic cost as well as competitiveness issues, especially as they pertain to small and medium enterprises; - Some reforms were being made to address the symptoms rather than the root causes of environmental problems, which is inefficient; - Insufficient capacity to enforce environmental regulations was adversely impacting the development of a green economy in the Syrian Arab Republic; - Lack of a skilled management structure that would follow-up on the various projects being implemented in rural areas was a major handicap that prevented the scaling-up of these projects for more sustainable results; - The importance of the legal framework for supporting the development of a viable EGS sector (building code driving insulation material business and wastewater standards driving wastewater treatment industry, among others) was also highlighted.

<p>Jordan: Workshop on the Role of Productivity</p>	<p>Amman, 6-9 June 2011</p>	<ul style="list-style-type: none"> • The Workshop discussed industrial energy generation and consumption efficiency, the role
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Activity title	Venue and date	Key findings and outcomes
Improvement in Enhancing Competitiveness of Manufacturing Firms in Jordan		<p>of the private sector in a green economy, environmental goods and services and eco-labelling.</p> <ul style="list-style-type: none"> • It helped to raise awareness about the green economy concept and principles, and the rationale for transitioning into such economy, as well as the challenges faced in terms of maintaining a competitive edge within a green economy and measures needed in this respect. • The different types of eco-labelling schemes and their impact on competitiveness were informed and an understanding of the importance of developing a national eco-label in Jordan and the potential associated pitfalls was developed. • Interest in further involvement in green economy issues and in sharing information/success stories of possible interest was indicated. • New opportunities and potential services for ESCWA were identified, where ESCWA could be involved in the preparation of a green economy strategy for Jordan that builds on the national initiatives already in place; and to conduct a feasibility/assessment study of a national eco-labelling scheme for Jordan, noting that Jordan is considering the idea of developing a national eco-label under the name of “Black Iris”.
Lebanon: Green Business Opportunities Conference	Beirut, 14-15 June 2011	<ul style="list-style-type: none"> • The Conference discussed green business opportunities in Lebanon and featured six specialized workshops on the following: green finance, energy, buildings, marketing, hospitality and the inaugural plenary session on green business.
Lebanon: Green Jobs Kick-off Workshop in the Arab States – ILO Regional Office for Arab States and ESCWA	Beirut, 28-29 July 2011	<ul style="list-style-type: none"> • The Workshop presented and validated assessments on the potential of green jobs in different sectors, including the energy, waste management, agriculture and construction sectors. • There is a considerable job creation potential in going green in Lebanon and several policy recommendations were identified, including, among others, the following: <ul style="list-style-type: none"> - To conduct follow-up studies addressing the decent work gaps identified to provide detailed analysis on employment in greening the various sectors; - To encourage social dialogue and to raise awareness and capacity-building of all actors

Activity title	Venue and date	Key findings and outcomes
		<p>for promoting the green agenda;</p> <ul style="list-style-type: none"> - To enforce policies that encourage green economy and promote green jobs; - To introduce further financial incentives aimed at encouraging green practices and green development; - To highlight the importance of closing the skills gap for the promotion of green jobs through vocational and technical training.
<p>Saudi Arabia: First Workshop on a National Planning Approach for Achieving Sustainable Development – the Ministry of Economy and Planning in Saudi Arabia, ESCWA, UNEP/ROWA and the Presidency of Meteorology and Environment (PME)</p>	<p>Riyadh, 21-22 November 2011</p>	<ul style="list-style-type: none"> • The Workshop discussed issues related to mainstreaming sustainable development indicators in the Tenth National Development Plan for various sectors. • It also discussed the implementation processes of the Ninth Development Plan and the mechanisms needed to ensure coordination and a participatory approach of all concerned institutions and agencies at the national, regional and local levels.

Annex II

OUTCOME OF THE ARAB REGIONAL PREPARATORY MEETING FOR RIO+20

We, the representatives of Arab States participating in the Arab Regional Preparatory Meeting for the United Nations Conference on Sustainable Development (Rio+20),

Recalling resolution 64/236 of the General Assembly of the United Nations, dated 24 December 2009, on the preparatory process for the United Nations Conference on Sustainable Development,

Recalling resolution (341-XXII) of 20 December 2010 adopted by the Council of Arab Ministers Responsible for the Environment at its twenty-second session to convene an Arab preparatory meeting for Rio+20,

Reaffirming the need for a balanced approach to achieve sustainable development and promote linkages and interaction among its economic, social and environmental pillars,

Stressing further the need to achieve fair and equitable development, so as to ensure the right of everyone to live with dignity in social cohesion and harmony; to decent employment; and to freedom from poverty, hunger and disease,

Considering that regional cooperation is a fundamental pillar for strengthening sustainable development programmes in a balanced way through regional integration, the exchange of expertise and best practices, sharing of knowledge, and emphasizing the inclusion of a regional dimension into the outcomes of Rio+20, on the basis of the commitment to the principles of the Rio Declaration (1992), Agenda 21, the Millennium Development Goals, and the 2002 Johannesburg Plan of Implementation of the World Summit on Sustainable Development (2002),

Reaffirming the importance of consistent and effective preparation for Rio+20 at the national and regional levels, through concerned institutions, for forging a unified position to represent the Arab region at Rio+20, which would reaffirm commitment to the principles of sustainable development, lead to a road map to sustainable development goals in the region and ensure a better future for its people,

We hereby agree on the following:

1. General recommendations

1. To ensure that the principles set forth in the Rio Declaration in 1992 are not compromised, and to reject any attempt to renegotiate them.
2. To reaffirm the principles of the Rio Declaration, particularly principle 7 on the common but differentiated responsibilities of States, and also principle 23 on the protection of the environment and natural resources of people under oppression, domination and occupation.
3. To further emphasize the importance to implement the outcomes of the United Nations summits and conferences on sustainable development, including Agenda 21, the Millennium Development Goals, the Johannesburg Plan of Implementation of the World Summit on Sustainable Development and the Monterrey Consensus; and that developed countries honour the commitments made at these summits; and that developing countries achieve the full enjoyment of their rights.
4. To achieve sustainable development by enhancing and integrating its economic, social and environmental pillars.

2. Progress achieved and gaps in the implementation of the outcomes of major summits on sustainable development

1. Arab countries have made progress towards sustainable development in a number of areas, notably education, health and the environment.
2. Challenges remain, especially in poverty eradication, job creation, the right to development, social cohesion, women's rights, the right of access to information, the needs of youth, trade liberalization, the transfer and localization of appropriate technology, finance mechanisms, and capacity building in the areas of sustainable development.
3. In order to face those challenges, Arab countries:
 - (a) Call on developed countries to honour their commitments, particularly towards developing countries; failure to honour commitments made in previous summits has been a major reason for the delay in the achievement of sustainable development in developing countries since the first Rio conference in 1992;
 - (b) Reaffirm their commitment to implement the Sustainable Development Initiative in the Arab Region adopted by the 2004 Arab Summit, and to bring it in line with new and emerging developments and challenges and support national and regional efforts and policies aimed at achieving sustainable development in the Arab region, including agreed upon goals;
 - (c) Refrain from accepting any additional commitments on developing countries; developed countries must fulfil their commitments towards developing countries, including the provision of adequate funding, transfer of appropriate technology and capacity-building to achieve sustainable development goals;
 - (d) Stress the importance of promoting Arab regional integration as an imperative for achieving sustainable development;
 - (e) Support the participation of women, young people, persons with special needs, the private sector, civil society organizations and stakeholders in development and decision making processes;
 - (f) Assert that conflict, occupation, aggression and economic sanctions are major obstacles to achieving sustainable development; special support is therefore, required to meet the development needs of people suffering from these problems, particularly people living under occupation;
 - (g) Stress the need to support and establish sustainable development information and data networks, with a view to strengthening the decision-making process and the creation of a regional sustainable development information system.

3. New and emerging challenges

1. Emerging social and political transitions in the region provide an opportunity to reconsider development priorities; notably give the social pillar greater attention in order to achieve social justice, create new job opportunities in public and private sectors, and reduce the brain drain, especially among young people.
2. Emerging issues facing the Arab region include:
 - (a) Climate change and climate change adaptation, the adverse effects stemming from the adaptation measures and the implications on the social and economic sectors, in addition to food security, water security, increasing drought and desertification, land degradation, natural disasters and extreme events (dust storms, heat waves and floods), diseases and epidemics;

(b) The impact of the global financial and economic crisis on developing countries, and the impasse of Doha Round negotiations. In this context, Arab countries call for the establishment of a fair international trade system that provides developing countries with adequate resources to support their efforts towards achieving sustainable development. They also call for devising a solution for the external debt problem, and honouring commitments to provide official development assistance at internationally agreed levels;

(c) Unprecedented population growth and urbanization over the past years, which has inflicted more pressure on infrastructure and increased demand for the provision of basic services such as water supply, sanitation, healthcare and education.

4. Institutional framework for sustainable development

1. An institutional framework for sustainable development is not an end in itself; it is rather a means to implement decisions agreed upon in the upcoming conference. Therefore, such a framework should address the three dimensions of sustainable development, and should not impose any further burdens, technical or trade barriers or conditionalities on developing countries.

2. The institutional framework has to be addressed on the basis of the following considerations:

(a) The need to adopt an integrated and comprehensive approach for sustainable development along its three dimensions, to strengthen the existing international institutional framework with a view to address its gaps and to work towards establishing and strengthening the institutional framework for sustainable development on both the national and regional levels;

(b) The institutional framework for sustainable development should not be used as a pretext to set environmental considerations as barriers or conditions on the provision of development assistance;

(c) The need to strengthen and establish national councils for sustainable development with a clear structure and defined terms of reference to enhance their ability to implement sustainable development strategies, plans and programmes;

(d) At the international level, focus should be placed on activating available mechanisms and existing institutions to address the shortcomings in coordination, and ensure cooperation and the optimum use of available resources, particularly already scarce financial resources, prior to considering the possibility of creating new institutions, in addition, to activating, strengthening and enhancing the existing institutional structures for sustainable development at the regional level, including regional commissions such as the Economic and Social Commission for Western Asia, and regional offices such as those of the United Nations Environment Programme.

(e) The need to strengthen coordination among international, regional and national frameworks, and support further coordination and coherence among United Nations agencies and organizations.

5. The green economy

1. There is as yet no agreement on the definition of green economy.

2. In this respect, Arab countries highlight the following:

(a) Any concept of green economy to be agreed upon in the future shall not imply that the green economy is an alternative for sustainable development but rather a tool to achieve it. The opportunities and challenges of a green economy shall be assessed, in addition to the required means of implementation, primarily funding, transfer and localization of appropriate technology, capacity-building and provision of technical support to developing countries;

(b) If an international concept of the green economy is to be adopted, special emphasis shall be placed on the principle of gradual transition to a green economy, in accordance with the socio-economic characteristics of individual countries and through the adoption of appropriate policies;

(c) The concept of a green economy shall not be used as:

- (i) A standard model applicable to the region as a whole;
- (ii) A pretext to create trade barriers and environmental standards that are difficult to implement;
- (iii) A basis and precondition for providing financial support and aid to recipient countries;
- (iv) A means to restrict the right of developing countries to utilize their natural resources according to their own development priorities;
- (v) A tool to exempt developed countries from honouring their commitments towards developing countries.