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LAS



UNEP/ROWA

REFERENCE PAPER

GREEN ECONOMY IN THE ARAB REGION: OVERALL CONCEPT AND AVAILABLE OPTIONS

May 2011

Preface

The United Nations Conference on Sustainable Development (Rio+20) will be held in 2012, pursuant to a resolution adopted by the United Nations General Assembly¹ in December 2009. The Conference will try to achieve the following goals:

1. Renewing political commitment for sustainable development.
2. Assessing the progress to date and identifying implementation gaps.
3. Addressing new and emerging challenges.

The Conference coincides with the 20th anniversary of the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992. It will focus on two fundamental themes that represent the main pillars of sustainable development in the light of existing challenges, namely:

1. The institutional framework for sustainable development.
2. A green economy in the context of sustainable development and poverty eradication.

The Economic and Social Commission for Western Asia (ESCWA) plays a fundamental role in the preparations for Rio+20 Conference in the Arab region in cooperation with other relevant regional bodies, particularly the League of Arab States (LAS) and the United Nations Environment Programme - Regional Office for West Asia (UNEP-ROWA). As such, ESCWA aims to cooperate and coordinate with various stakeholders in the public and private sectors and civil society organizations in order to reach a clear and harmonized Arab position regarding Rio+20 issues and the resulting socio-economic policies and potential work opportunities. Table (1) includes the major preparations for Rio+20 in the Arab region, including those already achieved or under preparation and these are constantly updated.

With regard to preparations, ESCWA is working on two complementary objectives, namely:

- building an Arab consensus on ways and mechanisms towards a green economy in the region, in cooperation with the LAS, UNEP-ROWA, and civil society organizations; and
- working with other United Nations regional committees to adopt a unified position and a common approach to green economy.

This reference paper was prepared by ESCWA pursuant to resolution 352 adopted at the 22nd Meeting of the Council of Arab Ministers Responsible for the Environment held on 20/12/2010. It will be submitted to the Arab countries to provide ESCWA with their feedback, suggestions, and recommendations in order to adopt a roadmap identifying issues to be covered by relevant work programmes and activities. The paper presents the most significant concepts regarding the green economy, existing regional challenges, and potential opportunities that must be considered when moving towards a green economy. Besides, the paper proposes a general framework to develop an Arab green economy strategy with stakeholders, particularly LAS. Currently, ESCWA is preparing a detailed assessment report on the green economy in the Arab region based on this paper, and will submit it to the Arab States at the Arab Regional Preparatory Meeting for Rio+20, to be held in Cairo on 16-17 October 2011. ESCWA will then submit the report to the Joint Committee on Environment and Development in the Arab Region, and to the Council of Arab Ministers Responsible for the Environment.

¹ General Assembly resolution 64/236 concerning “the Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development”.

Table 1- Preparations for Rio+20 in the Arab region including the participation in global preparatory meetings

Meeting	Date and venue	Expected Goals
1st Preparatory Committee (PrepCom I)	New York, 16-18 May 2010	Discussion on agreed technical themes for the Rio+20 Conference
Joint Committee on Environment and Development in the Arab Region (JCEDAR)	Cairo, 16-19 October 2010	Discussion on Arab preparations for the Rio+20 Conference
Regional Workshop on Trade and Environment: Developing the Environmental Goods and Services Sector in the Arab Region for Transformation into a Green Economy	Beirut, 15-16 December 2010	Consultation on green economy concepts and their significance to the Arab region
Meeting of the Council of Arab Ministers Responsible for the Environment (CAMRE)	Cairo, 19-20 December 2010	Presentation by ESCWA on the green economy and Arab preparations for the Rio+20 Conference
First Intersessional Meeting	New York, 10-11 January 2011	Report of the United Nations Department of Economic and Social Affairs
Third Round Table on Sustainable Consumption and Production in the Arab Region (by UNEP)	Cairo, 26-27 January 2011	Discussion on the relation between sustainable consumption and production with green economy
Second Preparatory Committee (Prep CommII)	New York, 7-8 March 2011	Discussion of Rio+20 Conference themes
Fifth Meeting of ESCWA Technical Committee	Beirut, 6-7 April 2011	Presentation of a reference paper on Rio+20 preparations (focusing on the green economy)
Awareness-raising campaign about Rio+20	May 2011	Creation of a website and publication of monthly bulletins on major global and regional developments related to Rio+20 themes
15 th Regional Coordination Mechanism (RCM) Meeting in the Arab Region	Beirut, 1 June 2011	Discussion of an Arab green economy ministerial initiative in the margin of the meeting
Training Workshop on Green Economy	Beirut, June or July 2011 (to be determined)	Training of technicians in the relevant ministries on developing national plans on transition to a green economy
Advisory Meeting of Civil Society Organizations	Beirut, September 2011	Consultations with civil society organizations on Rio+20
Seminar on Green Industries (in cooperation with the Arab Industrial Development and Mining Organization (AIDMO))	Beirut, September 2011	Discussion of an Arab action plan on green industries, especially small and medium enterprises
Arab Regional Preparatory	Cairo, 16-17 October 2011	- Discussion of the three Arab

Table 1- Preparations for Rio+20 in the Arab region including the participation in global preparatory meetings

Meeting	Date and venue	Expected Goals
Meeting for Rio+20		regional reports: <ul style="list-style-type: none"> • A regional review of the institutional framework for sustainable development; • Regional Assessment Report on the Green Economy in the Arab Region; • Progress Report on the Implementation of the Arab Initiative for Sustainable Development - Drafting an Arab declaration to confirm the political will to achieve sustainable development in the Arab region - Drafting an Arab ministerial initiative on the green economy
Joint Committee on Environment and Development in the Arab Region	Cairo, 18-20 October 2011	Review of outputs of the Arab Regional Preparatory Meeting
Second Intersessional Meeting	New York, 15-16 December 2011	Discussion of the outputs of the First Intersessional Meeting
Meeting of the Council of Arab Ministers Responsible for the Environment	Cairo, 21-22 December 2011	Confirmation of the political will and approval of the Arab ministerial initiative on the green economy
Third Intersessional Meeting	New York, 5-7 March 2012	Discussion about the outputs of the Second Intersessional Meeting
27 th ESCWA Ministerial Session	May 2012	Submission of a Draft Resolution on Green Economy in the Arab Region for approval by the Ministerial Committee of ESCWA
Third Preparatory Committee (Prep Comm III)	Rio, 28-30 May 2012	Draft negotiations
Rio+20	Rio, 4-6 June 2012	Roadmap and a toolkit for transition for a green economy

 Implemented

 Ongoing

 Future Activities

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I- THE GREEN ECONOMY CONCEPT

In 2008, the United Nations launched the Green Economy Initiative as one of a number of initiatives² aimed at addressing multiple and interrelated global crises which are having an impact on the international community, namely:

The Financial crisis: The financial crisis, which hit the world in 2007, is considered the worst financial crisis since the “Great Depression” as it resulted in the loss of many work opportunities and income in several economic sectors. The financial crisis had an adverse impact on economic and living conditions in many parts of the world as it generated increasing government debts and pressures on the Sovereign Wealth Funds (SWF), and reduced the available liquidity for investment.

The Food crisis: The food crisis was aggravated, during 2008 and 2009, by the increased prices of staple foods which were partially attributed to an increase in production costs, wide expansion of the biofuel sector, and increasing unemployment rates. As a result, the number of people threatened by hunger and malnutrition rose to one billion.

The Climate crisis: The climate crisis has emerged as a global priority that requires joined efforts to respond to, adapt to, and mitigate the effects of extreme climate changes which have become more frequent over the past few years.

In response to the abovementioned global crises, as soon as the green economy concept emerged in 2008, it mainly focused on reviewing the planning and implementation of trade and infrastructure activities to ensure the best returns on capital investment in natural, human and economic resources while seeking to reduce greenhouse gas emissions, the use of natural resources, and power generation waste, as well as helping to achieve social justice. Besides, the United Nations Secretary-General Mr. Ban Ki-Moon called for the ‘Global Green New Deal’ which urged countries to adopt plans promoting low-carbon green growth and clean production as a way to respond to economic crisis and climate change effects.

Recently, the green economy concept has evolved and expanded to cover the investments and actions necessary to respond to all environmental management challenges. In other words, green economy is no longer limited to climate change and reduction of carbon emissions: Moreover, the concept of green economy initiatives has evolved from achieving short-term green economic growth into strategically developing economic development paradigms in order to achieve long-term sustainable development.

Most references are based on the definition developed by UNEP, according to which “the green economy can be defined as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”.³ Nevertheless, the perspectives and priorities of United Nations organizations regarding the green economy vary depending on their benchmarks and work programmes (such as the International Labour Organization (ILO) Green Jobs, the World Bank Green Fund, and the United Nations Conference on Trade and Development (UNCTAD)

² The green economy initiative is one of nine initiatives aimed at responding to the economic crisis (to review the initiatives, see to: <http://www.undg.org/docs/10783/UN-System-Joint-Crisis-Initiatives,-16-Sept-2009.pdf>).

³ UNEP, “Green Economy Report: a Preview”, Nairobi, May 2010.

Trade-led Green Economy Growth), and depending on regional specificities as in the case of the United Nations Regional Commissions, including ESCWA.

The green economy is one of the most important themes of the United Nations Conference on Sustainable Development (Rio+20) as it is considered an important pathway and not an alternative to sustainable development. It is worth noting that a green economy requires complementary social policies, especially for poverty eradication, in order to reconcile social goals with the proposed environmental and economic goals (see figures 1 and 2). For a fair transition in all countries, all stakeholders agree that it is imperative to harmonize green economy foundations with Rio principles agreed to in the UNCED conference held twenty years ago, notably: (a) pollution control, (b) the polluter pays principle, and (c) common but differentiated responsibilities.

Figure 1- Green economy as a way to consolidate sustainable development pillars

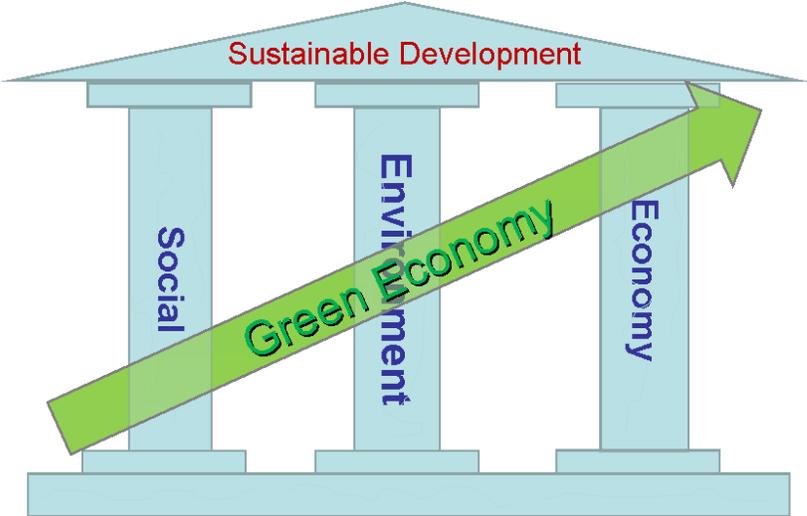
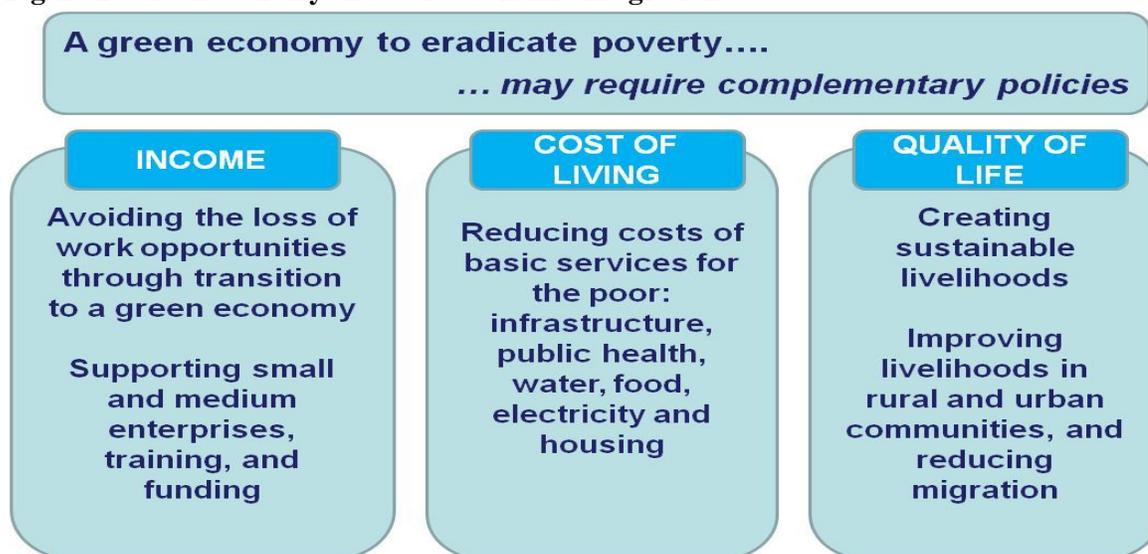


Figure 2- Green economy and socio-economic integration



I. Benefits of Transition to a Green Economy

Many stakeholders published reports and studies on green economy, the latest of which is the report issued by UNEP in February 2011.⁴ (See: Annex - Major research references on green economy since 2008). The reports focused on the assured environmental, economic and social benefits of green economy that can be summarized as follows:

A- Addressing Environmental Challenges

The concept of a green economy has originally stemmed from reducing the alarming environmental degradation caused by unsustainable production and consumption over the past decades. Therefore, reducing the ecological footprint is an integral part of the Green Economy Initiative. The most important environmental benefits of that initiative are the reduction of greenhouse gas emissions, and enhancing the efficient use of resources by “greening” the different economic sectors. Mechanisms of transition to a green economy are particularly focused on cutting carbon emissions resulting from energy production and consumption, especially that upgrading the efficient use of energy and expanding the use of renewable energy are the main pathways towards a green economy. According to relevant reports, the other environmental goals of green economy include: better waste reduction and management, improving water management, protecting biodiversity and putting an end to forest degradation and over-fishing.

B- Stimulating Economic Growth

The green economy concept promises to introduce a new paradigm for economic development based on large green investments in various sectors such as energy and renewable energy sources, green infrastructure, waste management and others. However, some doubt the green economy concept’s capacity to accelerate economic growth, and criticise its high implementation cost.⁵ According to UNEP

⁴ UNEP 2011, Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication.

⁵ The estimated financial resources required for a green global economy vary from one source to another, but most of them exceed one trillion US\$ per year or the equivalent to around 2 per cent of the global gross domestic product.

report, under a “green” scenario, short-term economic slowdown seems to prevail especially when measured with conventional methods that externalize environmental factors. However, a green economy is expected to grow faster in the long term (2020 and beyond) to reach higher growth rates than the current ‘business as usual’ rate. Pending corroborative evidence, the empirical paradigm used in the report expects that investing 2 per cent of global gross domestic product in the green economy over the next fifty years (i.e. 1.3 trillion US\$ per year) would generate long-term economic growth – at least equivalent to the expected growth of the “brown” economy, and will generate benefits resulting from averting environmental degradation risks.

C- Poverty Eradication and Employment Opportunities Creation

The global transition to a green economy could create huge opportunities of “green jobs” in the different economic sectors, such as employment in the fields of renewable energy generation, energy efficiency, ecosystem rehabilitation and protection, ecotourism, waste management, etc. Such transition brings solutions to eradicate unemployment in the Arab region. According to the latest studies of the International Labour Organization (ILO),⁶ many green sectors require a more sizeable workforce than the less environment-friendly alternatives (for instance, organic farming versus traditional farming). Therefore, the transition to a green economy may generate further employment opportunities and higher income to the people of the Arab region where the number of youth is increasing. Thus, green economy could bring a solution to one of the major challenges in the Arab region where a growing number of youth are looking for jobs. In this context, policies are needed to support small and medium enterprises – considered as a main source of employment opportunities – to adapt them to green economy requirements.

Furthermore, green economy helps to reduce poverty especially in rural areas through conservation and good investment of natural resources in income-generating activities – in agricultural and non-agricultural sectors – thereby reducing rural migration and improving livelihoods of local communities. Investments, aimed at ensuring a more environment-friendly agricultural sector, are expected to yield multiple benefits especially for small farmers and subsistence farmers by procuring food to the poorest, therefore positively contributing to addressing food security. The same applies to investments in ecotourism which are expected to support local economy. On the other hand, green economy is expected to mitigate water poverty, provide energy through strategies streamlining the consumption of natural resources, and stimulating investment in green infrastructure such as renewable energy services (through feed-in tariffs, for instance), drinking water and sanitation.

Creating a green economy will not only have a positive impact on rural populations but will also allow the populations of greener cities to benefit from a cleaner environment, better services (through sustainable means of transport), and reduced energy costs (through green buildings), therefore stimulating urban economy as a hub of innovation and investment in promising green sectors.

II- GENERAL REGIONAL FRAMEWORK AND MAJOR CHALLENGES

The transition to a green economy in Arab countries should take into consideration the challenges, available opportunities, as well as the socio-economic and environmental reality in the region in order to

⁶ ILO, 2011, Promoting Decent Work in a Green Economy

develop a regional vision that is in line with and complementary to regional specificities and priorities, and reiterates renewed commitment to sustainable development principles in accordance with Agenda 21. As such, the Arab region will gain a stronger position and speaks in one voice in Rio+20. Achieving sustainable development in the Arab region faces the following challenges:

A- Political Changes

Since early 2011, the Arab region has been experiencing decisive and highly significant political shifts that reflect the yearning of Arab populations for decent life and for consolidated institutional action based on transparency and good governance. Those shifts are expected to have different— either positive or negative – repercussions on sustainable development in general and on transition to a green economy in particular. It is necessary to closely monitor those changes and assess their potential impact on the management of natural resources in the region, and particularly on (available) oil resources and (scarce) water resources. Here lies a strategic opportunity to streamline the production, consumption and management of those resources.

B- Aggravating Water Scarcity⁷

The Arab region faces multiple pressures and challenges threatening the sustainability of its already scarce water resources. In fact, natural water scarcity, coupled with dry and semi-dry climate, increases water evaporation and Loss of water resources. Besides, unsustainable consumption rates, especially in agriculture, contribute to the depletion of water resources. Around 30-50 percent of drinking water is lost due to outdated and poor distribution networks.

For instance, the total freshwater extracted from traditional sources in the ESCWA region was estimated at around 304 billion m³/year in 2007, while the extracted water resources reached 227 billion m³ in the same year. Demand on water resources is expected to grow to around 262 billion m³ in 2025, and water deficit is expected to continue its upward progression in the future.⁸

The average renewable water resources *per capita* in the ESCWA region was 1.244 m³ in 2007 compared with a global average of 8135 m³ per year, and is expected to decline to 740 m³ *per capita* per year by 2015, i.e. much less than the global average. Countries show considerable disparities in figures; in Iraq, for instance, renewable water resources reached 3777 m³ *per capita* per year in 2007, while it was 7 m³ *per capita* per year in Kuwait.⁹

C- Challenges of the Energy Sector

The energy sector challenges vary from one country to another in the Arab region, especially between the oil-producing and non-oil producing countries and depending on their economy and income levels. Transition to a green economy involves several challenges that are worth noting, such as:

- Ensuring access to energy services in poor and remote areas in some Arab countries where local communities meet their energy needs by burning wood and agricultural waste, thereby causing harm to public health and environment, especially if tree felling is unsustainable.

⁷ Assessment of Water Quality Management Practices in the ESCWA region, 2007 (Arabic)

⁸ ESCWA 2009, Compendium of Environment Statistics in the ESCWA region (E/ESCWA/SD/2009/13)

⁹ Idem.

- Some Arab countries possess huge gas reserves that are not optimally tapped due to the high costs of exporting liquefied gas and the absence of integrated intra-regional distribution networks. Therefore, gas could be used to generate power in production sites and could be electrically exported to other Arab countries through electrical interconnection networks. Electrical interconnection represents a way to upgrade power systems efficiency, reduce greenhouse gas emissions, and achieve the potential economic benefits of reducing investment and operational costs of power production.¹⁰
- In the context of streamlining energy consumption and enhancing efficiency, the entire region faces challenges in increasing the contribution of renewable energy to the energy supply owing to technical, economic, financial, social, and institutional obstacles that hamper the dissemination and use of new technologies and practices.
- Moreover, the increase of oil prices will certainly boost the revenues of some countries in the region, despite the fact that it would create financial crises and inflation in some industrialized countries, whose products are re-exported to all countries of the region, therefore creating a negative impact on development in the poor and least developed countries.

D- Food Security Threats¹¹

Arab countries were adversely affected by the global food crisis as they rely on imported food products to cover between 50 and 100 per cent of their food needs. Food products account for 5 to 10 per cent of total imports in the ESCWA region, including wheat which represents the main strategic crop in the region. The Gulf countries import around 100 per cent of their staple food needs, but are less vulnerable than non-oil exporting countries in the region owing to cash surplus generated by the oil sector. The most exposed countries to global food price volatility are those with relatively high poverty rates such as Iraq, Palestine, and Yemen in addition to countries that import and subsidize fuel and many food products.

E- Climate Change and Extreme Weather Events¹²

Despite the low contribution of the Arab region to global greenhouse gas emissions (until 2004, this contribution ranged between 3 and 5 per cent), the Arab region is expected to be the most exposed to the potential effects of climate change which is also likely to have an equal impact on environmental, social, and economic aspects in the region. Therefore, the effects of climate change will undermine the implementation of national development policies, pose a threat to human security and livelihoods (notably due to environmental migration), and are more likely to affect vulnerable and marginalized groups such as women, elderly people, children, and the poor.

Anticipated climate change effects include the following: increased temperature, decreased soil humidity, increased evaporation and transpiration, changes in rainfall patterns in terms of time and spatial

¹⁰ Updated study on the current situation of selected energy sectors in ESCWA countries: Natural gas and power sectors, E/ESCWA/SDPD/2003/4 (Arabic)

¹¹ Item 3 of the Provisional Agenda – Regional and Global Priorities: the financial crisis, food security and climate change, ESCWA, 2009.

¹² Item 3 of the Provisional Agenda – Regional and Global Priorities: the financial crisis, food security and climate change, ESCWA, 2009.

distribution, severe annual and seasonal fluctuation of extreme climate events, increased droughts and floods, reduced snow cover in highlands (such as on mountains in Lebanon, the Syrian Arab Republic, and to a lesser extent in Iraq), sea level rise and seawater intrusion into coastal freshwater aquifers. Besides, climate change may adversely affect quality of water by contaminating ground and underground water and increasing water salinity. The situation may become more complicated as the inflow of freshwater resources to the Arab region represents around 60 per cent of the total available water resources. Climate change is expected to affect many sectors such as agriculture, health, public safety, biodiversity, water desalination, tourism, hydroelectric power generation, fluvial navigation and others.

F- Unsustainable Consumption and Production^{13,14}

The rapid demographic increase, rural migration, and some subsidy policies (particularly for oil products) result in an increased demand on natural resources in the Arab region, and encourage economies to adopt unsustainable consumption and production patterns, thereby having an impact on economic growth but causing environmental degradation. The existing gaps and inconsistencies of policies aimed at achieving growth have aggravated unsustainable consumption and production in the Arab region.

For instance, many factors contribute to an increase in carbon dioxide emissions, such as the growing number of vehicles in the transportation sector, traffic mismanagement, energy inefficiency as well as inefficient public transportation, outdated vehicles, and crowded roads. In the Gulf Cooperation Council (GCC) countries, the use of energy in the production of petrochemicals, aluminium, and fertilizers is the main source of carbon dioxide emissions and other air pollutants.

In the water sector, consumption rates increased as a result of rapid demographic growth and increasing socio-economic development in spite of a decrease in *per capita* freshwater. Water consumption rates are increasing in the GCC countries despite water scarcity and reliance on desalination. Agriculture consumes more than 80 per cent of available water resources in the region, as inefficient irrigation systems, coupled with a failure to implement integrated management of water and land resources, have exerted great pressure on the scarce water resources in the Arab region.

The lack of waste management and changing life patterns result in increased waste with higher rates of organic materials. Furthermore, an increase was noted in the rates of hazardous waste generated by the industrial sector, especially oil, minerals and chemical industries in the Arab region.

G- Population Growth especially Youth¹⁵

In ESCWA region, the young population (aged between 15 and 24 years) is the largest demographic group with the fastest growth rate. The number of youths rose from 33 million in 1980 to around 66 million in 2005, accounting for around 21 per cent of ESCWA total population. The youth population is expected to reach 78 million in 2020 or 18 per cent of the total. This growing number represents a new opportunity for development provided that youth receive enlightened education and are provided with sustainable production capacities, but it may also pose huge social, economic, and political challenges in

¹³ Strengthening the energy sector contribution to sustainable development, ESCWA, 2009 (Arabic).

¹⁴ Arab Regional Strategy for Sustainable Consumption and Production, Final Draft, 2008

¹⁵ Population and development report Issue no.4: "Youth in the ESCWA region: Situation Analysis and Implications for Development Policies". ESCWA, 2009

the absence of policies geared towards the optimal use of youth potential the, creation of positive education and work opportunities, as well as their participation in decision-making and in the public sector. Unemployment represents a great problem in the region as it reached around 30 per cent in 2005. This ratio varies from one country to another: 25 per cent in Egypt, 39 per cent in Jordan, and 17 per cent in Qatar in the same year.

III- PATHWAYS AND STRATEGIES TOWARDS A GREEN ECONOMY

Although the green economy may create attractive opportunities, developing countries are still concerned about the large-scale transition to a green economy. This transition may be costly and may not guarantee poverty alleviation or social integration *per se*, thus it requires complementary and offsetting mechanisms to reconcile the proposed social goals, and the proposed economic and environmental goals. On the other hand, there is concern that this transition could become another tool to restrict development and human welfare in developing countries.

The transition to a green economy offers a full set of socio-economic strategies, means and tools which could be selectively used by decision makers in Arab countries depending on their national situations and available capacities. Low-risk and win-win options could be first adopted as opposed to other options based on trade-off. As such, pathways towards a green economy are likely to vary from one region or country to another.

Pathways towards a green economy could be classified under two categories. First, “Growing the Green” based on investments in various environmental sectors to create new job opportunities and boost demand on environment-friendly goods and services (see table 2). Second, “Greening the Brown” based on enhancing, restructuring or rehabilitating existing productive sectors to make them more environment-friendly. The two categories are mutually reinforcing and their success depends on public-private partnership, and on commitment by decision makers, investors and producers to the transition to green economy.

Table 2- Green economy policies

Growing the Green	Greening the Brown
<p>Creating new socio-economic opportunities by greening existing economic activities:</p> <ul style="list-style-type: none"> - Improving trade flows and focusing on environmental goods and services - Producing and distributing renewable energy - Supporting innovation, research and development, and technology transfer - Promoting entrepreneurship, education and re-training <p>Expected benefits:</p> <ul style="list-style-type: none"> - Environment conservation - New areas for economic growth - New work opportunities - New sources of income - Youth employment in new sectors 	<p>Creating new Socio Economic Opportunities by making economic activities more environment-friendly:</p> <ul style="list-style-type: none"> - Promoting sustainable transport - Adopting green building and design - Greening the energy sector - Enhancing water management and desalination - Ensuring a sustainable agricultural sector <p>Expected benefits:</p> <ul style="list-style-type: none"> - Reducing carbon emissions - Enhancing public transport - Reducing water scarcity - Improving food security - Reducing land degradation and desertification

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The report submitted in 2010 by the Secretary-General at the First Meeting of the Preparatory Committee of Rio+20¹⁶ identified different categories of green economy pathways which may not be necessarily exhaustive but provide useful examples of available options. The following paragraphs draw out a summary of those pathways including their benefits and drawbacks, in addition to some leading experiences and initiatives towards establishing the green economy experience in the Arab region at the national and local levels.

A- Green stimulus packages and strategic public expenditure

In the past years, many countries including Japan, South Korea and the United States, allocated large investments estimated at billions of dollars to create new job opportunities and increase income through low-carbon green growth strategies.¹⁷ Furthermore, China allocated large amounts in several economic sectors to mitigate the impact of climate change, while many Arab countries in particular, financed renewable energy projects. Growing investments in “green sectors” are expected to enhance the economy and respond to major global environmental crises. According to the United Nations Framework Convention on Climate Change (UNFCCC), a considerable growth of investments is needed to achieve international objectives regarding climate change adaptation and mitigation.

However, large stimulus packages are not an available option to many developing countries including some Arab countries, especially those with a heavy public debt burden. Besides, that option raises questions about the long-term feasibility and sustainability of the stimulus packages and accompanying risks such as the capacity of new corporate beneficiaries from these packages to stay the course once such subsidizing and stimulating policies are no longer in place.

Box 1- Sustainable transport and cleaner fuel vehicles

The city of Dubai created sustainable public transportation by establishing the subway network to induce a 30 per cent reduction in private car use, thereby cutting greenhouse gas emissions, especially in that the subway uses renewable energy. The initiative will improve and facilitate urban transport. With regard to cleaner fuel, natural gas vehicles are the most commonly used among cleaner fuel vehicles. Some countries in the region have started to introduce that technology into their means of transportation, notably cleaner fuel varieties including natural gas which has been increasingly used for taxi vehicles in some countries such as Egypt, followed by the Syrian Arab Republic and the United Arab Emirates. Since 1994, Egypt has adopted natural gas for transportation by establishing the first company converting vehicles engines to use compressed natural gas, and by 2009, Egypt had six companies converting vehicles to natural gas; around 114 natural gas supply stations were established, and the number of natural gas vehicles reached around 119.000 of which 79 per cent are taxi vehicles (ESCWA, Expert Group Meeting on Transport for Sustainable Development in the Arab Region, and its Relation to Climate Change Issues, Cairo, 29 September – 1 October 2009, Egypt paper). To support the shift to natural gas, Egypt introduced a set of incentives such as offering tax exemptions for companies using natural gas

¹⁶ General Assembly document A/CONF.216/PC/7

¹⁷ UNEP, “Japan and the Republic of Korea Launch Green New Deals”, Press Release, 9 January 2009, <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=556&ArticleID=6035&1=en>

vehicles in the first few years, cutting conversion costs for vehicle owners, and introducing a competitive gas price compared to gasoline.

Source: ESCWA; 2009: *Transport for Sustainable Development in the Arab Region: Measures, Progress Achieved, Challenges and Policy Framework*, E/ESCWA/SPDP/2009/WP.1

B- Improving Environmental Efficiency

The environmental efficiency of many sectors in Arab countries (i.e. the sustainable consumption of natural resources in production,) is considered as below the optimal level. Further efforts could be made to improve performance and productivity by converting to production paradigms tailored to green economy concepts, such as waste reduction. It is important to offer mechanisms to help private companies evaluate their environmental performance, and to provide incentives to invest in environment-friendly production through tax policies and other policies such as environmental efficiency programmes certificate and recognized environmental performance services. Moreover, an *ad hoc* programme and coordination mechanisms could be developed in support of green investment in small and medium enterprises in order to create green jobs and improve income. Cleaner production centres in the Arab region play an effective role in supporting industry and enhancing production.

Besides, the service sector can be targeted to provide green opportunities and for investment. For instance, the existing expansion of health care services in most countries of the region will certainly lead to an increase in medical waste production, particularly hazardous waste. Large investment opportunities in medical waste management should be used to create new job opportunities in hazardous waste collection, treatment and safe disposal, thus developing a more environment-friendly sector.

The increasing awareness of consumers and civil society about the consequences of current consumption patterns helps boost demand for green economy services, therefore encouraging production sectors to follow sustainable production patterns and gearing new investments towards the desired goal.

Box 2- A Future Model City

Masdar city is a future model city and the first city aiming to be free of pollution and waste in the world. It is also the first city to adopt renewable energy sources. It is part of a very promising initiative called “One Planet Living” also known as “the Masdar Initiative”. As mentioned earlier, Masdar city will need around 200 megawatts of clean energy compared with more than 800 megawatts for a conventional city of the same size. The city will also need around 8000 m³ of desalinated water per day compared with more than 20,000 m³ per day for a conventional city. It will include a solar power plant, and its water will be recycled for use in irrigation and agriculture.

Masdar city has two main roles, one economic and another scientific. Economically, Masdar city is expected to use renewable energy, thereby paving the way for the development of future technologies and creating effective balance in the global energy market which is still developing at high rates. As a result, Abu Dhabi will be able to harness its resources and expertise in global energy markets and build on them to reach new technologies. Scientifically, Masdar city is considered as a global compound of clean technologies that will be fully operational using renewable energy. This goal will be attained through the Masdar Initiative which is an effective joint action aimed at finding proper solutions to the most pressing issues affecting human life, such as energy security, and eventually developing human expertise.

Masdar's urban model is expected to prove the suitability and economic feasibility of new technologies, thus encouraging the private sector to replicate them. Besides, the Masdar model will contribute to local capacity-building and use of local expertise, technologies and knowledge as a main pillar of sustainability.

Source: <www.masdar.ae >

C- “Greening” markets and public purchases

“Greening” markets and public purchases could boost demand on environmental goods and services. As a result, Arab countries will be faced both with a big opportunity and a challenge. When Arab enterprises are specialized in “green” markets, they can play a crucial role in international trade exchange in the future. However, developing countries are concerned that transition to a green economy might pose technical barriers to trade by banning products and productions that do not comply with environmental performance or standards applied by industrialized countries. International trade rules allow strict environmental measures to be imposed on countries, provided that non-discrimination principle is applied; in other words, the same rules must be imposed on local products and imports. Protectionist measures have had a negative impact on the competitiveness of Arab products and their access to global markets in some sectors, such as textiles and food industries, especially for small and medium enterprises that are unable to comply with new standards.¹⁸

Compliance with environmental standards requires domestic industrial restructuring or changes in production methods and process, which may adversely affect corporate competitiveness and therefore reduce productivity and employment. However, losses may be offset through a strategic evaluation of each company to reduce costs, and improve market positioning using different tools and methods such as the Larson Model, recently applied by ESCWA in several sectors.¹⁹

Box 3- Environment-friendly buildings

Saudi Arabia has established many environment-friendly buildings inspired by traditional architectural concepts to pave the way for future architectural achievements. King Abdullah University of Science and Technology (KAUST) is considered as a model building with innovative designs including the following::

- (a) natural solar lighting, reducing the need for electrical lighting inside;
- (b) “solar cooling” through solar towers retaining solar heat and hot air to facilitate air movement in buildings and therefore reduce the need for electrical cooling; and
- (c) solar power which saves annual energy costs by 27.1 per cent.

Source: <www.kaust.edu.sa>

¹⁸ 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, 25 October 2001

¹⁹ ESCWA, Environmental Standards and Competitiveness of Key Economic Sectors, E/ESCWA/SDPD/2005/4, 5 July 2005, pp.14-16

D- Investing in green infrastructure

The growing demand on power and water outpaces existing infrastructure growth in the Arab region. Therefore, annual expenditures of more than 20 billion US\$, in the ESCWA region alone, are expected to be earmarked for energy projects over a five-year period.²⁰ Besides this, large investments in water and sanitation services are needed in rural and remote areas in the Arab region to enhance public health, and to have a positive impact on environment in particular, and on livelihoods and incomes in general. As such, Arab countries may direct some of these investments to renewable energy as well as water and energy efficiency projects to pave the way for a green economy.

In the construction and real estate development sector, which is significantly growing in the region, modern and highly energy-efficient buildings (smart buildings) could be designed and built using available construction materials and resources as well as local knowledge and expertise (as, for instance, Masdar urban model in the United Arab Emirates). Moreover, investment in sustainable and comprehensive public transportation represents an important opportunity at the environmental and social improvements.

On the positive side, Arab countries will not need to start from scratch as they can build on multiple success stories of green infrastructure development projects and initiatives to move towards a green economy. The challenge lies in expanding and upgrading programmes and projects to achieve national and global benefits.

Box 4- Solar energy use in Morocco and Yemen

It is very difficult to supply remote rural areas with traditional power installations in many Arab countries. In Yemen, ESCWA implemented a pilot project in Kaawa village in coordination with the Ministry of Electricity and Energy in Yemen and in cooperation with the Organization of the Petroleum Exporting Countries (OPEC) Fund for International Development. The project was aimed at achieving rural development and reducing poverty by ensuring better quality of life to rural population, minimizing the gap between rural and urban areas, and creating job opportunities. The project beneficiaries are Kaawa population, local authority and the Ministry of Electricity and Energy.

The project involved the following main activities:

- (a) Procuring and installing photovoltaic solar systems in the village;
- (b) Providing field training for Yemeni workers and technicians on the installation and maintenance of photovoltaic solar systems, in addition to training and familiarization of rural population about operating and maintaining combined systems;
- (c) Conducting performance and project evaluation one year after the completion of operational works, at the technical and social levels.

In Morocco, a solar power plant was inaugurated in May 2010, the first of its kind in Africa and the Arab world. The plant is expected to generate an annual rate of 3538 gigawatts per hour and to cover

²⁰ ESCWA, "The liberalization of trade in environmental goods and services in the ESCWA and Arab regions, E/ESCWA/SDPD/2007/WP.1, 22 October 2007, p.5

around 13 per cent of Morocco's power needs.

Source: Deghaili, W.; 2009: *Improving Rural Livelihoods through Photovoltaic Electrification: the ESCWA pilot in Kaawa, Yemen*, Expert Group Meeting on Adopting the Sustainable Livelihoods Approach for Promoting Rural Development in the ESCWA region, 21 – 22 December 2009

E- Restoring and strengthening natural capital

There is a widespread consensus on the important services provided by ecosystems and biodiversity for local communities, especially the poor, and their important role in national economy. As such, sustainable land management programmes should be adopted to maintain agricultural land productivity in addition to forest protection and biodiversity programmes. However, the success of programmes often depends on local capacity-building to manage shared resources in accordance with clear and locally adapted rules.

In this context, green investment can be geared towards the agricultural sector to enhance water efficiency and reduce soil degradation through more sustainable agricultural practices based on using less fertilizers and chemical pesticides. Organic farming also represents a promising opportunity as it causes less harm to the environment than conventional agricultural practices, and usually requires more labour. Studies have shown that organic farming creates around 30 per cent more job opportunities than conventional agriculture for a similar productivity level²¹.

Box 5- Wind energy use in Egypt

Egypt has developed a leading experience in using wind energy in the Arab region. In 2008-2009, hydroelectric power generation and wind energy reached 11.3 per cent and 0.7 per cent respectively, while combined power generation reached 11.9 per cent and 1.8 per cent respectively. The combined power generated by wind farms rose from 430 megawatts to 550 megawatts (August 2010). The Higher Council of Energy approved the strategy of the Ministry of Electricity to increase the renewable energy share of total electrical production to 20 per cent by 2020 (including 12 per cent from wind energy). The combined energy capacity should not be less than 7200 megawatts of which 66 per cent will be procured with the participation of the private sector.

The Egyptian government allocated an area of 7647 km² for wind farms with an almost free land access to investors. In 2009 and 2010, five wind farms with a production capacity of 5x250 megawatts were announced through Build-Own-Operate (BOO) contracts, and the first wind farm will be completed in mid-2014. The projects are expected to be successfully completed. The Egyptian government supports renewable energy power generation projects by giving top priority to linking them to the electrical network, providing investments, guaranteeing the price of energy purchased from the projects, though identifying long-term energy deals for 20 to 25 years at a price covering costs and returns on investment, while benefiting from low-carbon emission certificates, exploring local manufacturing opportunities and using local capacities to manufacture some of the equipments(iron structures, electrical equipments, pipes, etc), and technically cooperating with global companies under certain forms of partnerships to manufacture other equipments (air turbines, for instance). The private sector participates in wind power

²¹ UNEP, 2011, *towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, p56.

generation through competitive bids organized by the competent authority. This experience will allow for price identification and future transition to preferential tariff regimes.

Source: Deghaili, W.; 2009: Improving *Rural Livelihoods through Photovoltaic Electrification: the ESCWA pilot in Kaawa, Yemen*, Expert Group Meeting on Adopting the Sustainable Livelihoods Approach for Promoting Rural Development in the ESCWA region, 21 – 22 December 2009.

F- Environmental accountability and right pricing

Environmental accountability, based on incorporating the environmental dimension into economic systems, will contribute to the right pricing of goods and services. The right pricing mechanism will, in turn, send the right signals to producers and consumers and encourage them to adopt sustainable consumption and production patterns. It will also help decision-makers to undertake a real impact assessment of projects and programmes and take the right decisions. As a result, the following tools are discussed in international forums:

- Eco-tax systems: Eco-taxes can take different forms such as carbon taxes (levied on using fossil fuel), taxes on energy inefficient goods (such as large and vehicles with high gasoline consumption), and taxes on waste production and disposal. However, those systems may lead to regressive taxation levied on the poor as opposed to progressive taxation. Therefore, adequate taxation programmes should be prepared to avert the adverse impact on the poor.
- Payment for ecosystem services (PES): These systems are used to support farmers and land owners by offering them financial incentives and certain compensations in exchange for good land management and conservation of natural resources. Here lies the importance of designing a good subsidy system to avoid bad subsidies.²²

G- Research and development and technology transfer

Access to environmentally sound technologies represents a crucial issue in the general framework of green economy. Research and development help localize and adjust technologies according to local usage. The most important ways to strengthen research and development and innovation in the green sector are to build partnerships among the private and public sectors, academic institutions, as well as research and development centres, and providing good financial mechanisms to spread the use of green technologies in Arab countries. In this regard, small and medium enterprises should play a leading role in innovation, especially in the renewable energy sector, as green innovation contributes to business development and to reducing unsustainable practice. Private companies can also play a leading role on the market to increase sales and revenues by adopting and localizing modern technologies. These factors are positively reflected in the growth of gross domestic product and national employment rates in green sectors, especially for educated youth.

²² According to Khan (2006), subsidies can be classified under three categories: “good” subsidy, “bad” subsidy and “ugly” subsidy. “Good” subsidy includes measures promoting sustainable activities such as research and development in environmental technologies; “bad” subsidy” includes curtailing the costs of fossil fuel or pesticides which go in the opposite direction of green economy; and finally, “ugly” subsidy measures come as a result of unclear policies that may have a positive or negative impact (for instance, subsidizing fertilizers which may increase land productivity but at the same time increase water pollution). Khan, A, Sumaila, U.R., Watson, R., Munro, G. and D. Pauly 2006. The nature and magnitude of global non-fuel subsidies.

H- New funding arrangements

Arab countries need to create new funding mechanisms to encourage green investment. As such, Arab – national and regional – funding companies should play a leading role by allocating funds to environmental projects. Through the League of Arab States, countries agreed to create an Arab environment facility similar to the Global Environment Facility (GEF), although this project is yet to be implemented pending necessary funding and selection of a head office.

Besides, global funds (such as GEF) could be used, especially those related to climate change and the Reducing Emissions from Deforestation and Forest Degradation (REDD) programme, to finance green investments and environmental protection projects.

I- Training and rehabilitation

Training and skills development are two main pillars of national economy development in green productive sectors. However, the required time and costs for youth training or re-training in these new sectors pose a great obstacle to green economic expansion due to the lack of skilled labour in advanced technology. Close cooperation among research institutions, vocational training institutes and universities is an important political priority for all developing and developed countries, so as to have skilled labour capable of implementing green economy policies. In this context, capacity-building programmes must be activated and upgraded including establishing specialized training centres to provide national skills with competitive and innovative capacities in Arab and global markets, in order to avoid a lack of skilled labour for green economy investments in the Arab region.

IV- GENERAL FRAMEWORK OF AN ARAB GREEN ECONOMY STRATEGY

This paper has highlighted multiple opportunities and challenges involved in the transition to a green economy in the Arab region. In the light of prevailing complications, the remaining question is how will ESCWA member countries address this topic in international and regional forums? The answer is summarized in the paragraphs below.

A- Fundamental principles to be defended in international forums

Arab countries must play an effective role in international forums related to green economy to ensure fair transition to a green economy and avoid any related risks. Fundamental principles which should be defended by the Arab countries include:

- Emphasizing that Arab countries should have a flexibility in choosing pathways to green economy commensurate with their national and regional specificities and priorities; it is important, in this context, to counter any unjustified conditionality that may be imposed by developed countries in exchange for Official Development Assistance (ODA) such as grants, loans and debt rescheduling;
- Holding on to all Rio principles, particularly those related to common but differentiated responsibilities, the “polluter pays”, international cooperation in capacity-building and technology transfer, and adopting a supportive, open and international economic system;
- Countering green protectionism policies that may result from green technical standards applied by developed countries to limit the entry of non-compliant goods to their territories.

- Green technical standards represent a main component in transition to a green economy; thus, Arab countries must seek to harmonize standards to avoid any additional trade barrier;
- Calling on developed countries to provide adequate, new and additional international funding of green economy, focusing on green investments in various environmental sectors, not just on those related to mitigating climate change and reducing carbon emissions, and giving priority to technology transfer.

Those were the fundamental principles emphasized by developing countries and a number of Arab countries in the first and second meetings of the Preparatory Committee of the United Nations Conference on Sustainable Development (Rio+20), in spite of some diverging views (see Table 6).

Box 6- Positions of countries at the First and Second Meetings of the Preparatory Committee of Rio+20

The Group of 77 and China noted that it was important to enhance political will and make efforts to strengthen the commitment of governments and United Nations organizations concerned with sustainable development to increase cooperation and provide adequate financial resources. The group also noted that it was important to develop an institutional framework for sustainable development which is tailored to country needs and included effective operational methods and mechanisms. Furthermore, official development assistance should be provided to boost scientific, technical and technological capacity-building in developing countries.

With regard to Arab countries' positions, Egypt emphasized that green economy should be considered as a pathway and not an alternative to sustainable development, and that challenges resulting from green economy should be taken into consideration such as barriers to trade, international funding conditions and impact on subsidies in various sectors. The green economy should promote appropriate green technology transfer and offset the potential social and job losses. Egypt requested the United Nations Department of Economic and Social Affairs (DESA), UNEP and other relevant organizations to develop an assessment study of potential challenges, risks and benefits of the green economy, in participation with scientists and economists from developing and developed countries, and to submit it for discussion at the Second Meeting of the Preparatory Committee.

Palestine noted that the green economy should involve practical solutions and actions that could be useful to countries, and that challenges and gaps already discussed in previous meetings and conferences should be overcome. Moreover, the participation of all stakeholders in the transition to a green economy should be taken into consideration. Saudi Arabia supported the statement of the Group of 77 and China but also expressed concerns about giving priority to environment to the detriment of socio-economic development in the green economy, and about the potential negative impact of transition on energy and food security.

Algeria reaffirmed Rio principles and called to explore the reasons behind the delayed implementation of sustainable development goals. It hoped that the summit would reach a clear agenda with clear funding and follow-up mechanisms. Morocco stressed that the green economy should have social, commercial, technical and financial dimensions. Tunisia said that the latest revolution in the

country reflected the importance attached by the youth to decent employment and social justice. It also called upon Rio summit to promote global justice and decent work.

ESCWA pointed out that the green economy must adopt a holistic approach that would contribute to providing investment, facilitating trade as well as transferring and localizing appropriate and environment-friendly technologies in order to reduce pollution, enhance the management of natural resources, and increase access to environmental goods and services; such as access to safe and appropriate drinking water and sanitation, especially in rural areas. Besides, green economy initiatives should evaluate and respond to crises that affect water and food security, energy supply, work opportunities, and national security in general. The transition to a green economy should be flexible and adapted to national conditions, economies and strategic priorities.

B- General framework of an Arab green economy ministerial initiative

Drafting an Arab green economy ministerial initiative approved by the Council of Arab Ministers Responsible for the Environment will provide a unified framework for action, strengthen regional integration and support the position of the Arab countries at Rio+20 conference in 2012.

The initiative must underline the importance of the participation of all sectors and ministries in the transition to green economy and adopt a participatory approach that includes stakeholders inform the public and private sectors and the civil society. Besides, the proposed initiative should complement existing and agreed Arab initiatives, notably the following:

- The Arab Initiative for Sustainable Development, issued before the World Summit on Sustainable Development (2002);²³
- Regional Programme for Trade and Environment Capacity Building in the Arab Region (2003);
- Arab Regional Strategy for Sustainable Consumption and Production (2009).

In order for Arab countries to make the right choice and identify the best approaches towards a green economy, the Arab Initiative should recommend developing a detailed regional economic paradigm that analyzes and evaluates transition cost and the green economy capacity to stimulate economic growth in the region, create job opportunities, and reduce poverty; taking into account regional specificities, particularly the sustained political shifts in the region. This paradigm should be based on clear and detailed data which can be submitted by drafting reports on the following issues:

- Documenting Arab green initiatives, best practices, and success stories in the region, and focusing on legislation and laws that encourage green investment and green funding mechanisms.
- Identifying and considering suitable indicators to measure the green economy in the Arab region.

²³ League of Arab States, the Sustainable Development Initiative in the Arab Region, 2002

- Identifying green job opportunities in the Arab region, in addition to training and capacity-building needs in support of innovation, research and development and transfer of green technologies.

ESCWA also suggests intensifying capacity-building programmes that empower stakeholders in the Arab public and private sectors in order for them to contribute to a successful transition to a green economy in accordance with the priorities and needs of Arab populations, and emphasizing the role of United Nations organizations and non-governmental development organizations in this field.

Annex – Major research references on green economy since 2008

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