CSD-15 Conference Room Paper

Regional Commissions Input to CSD 14/15, Implementation Cycle

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Foreword

The Economic Commission for Latin America and the Caribbean (ECLAC) has been requested to coordinate the preparation of regional inputs for the regional sessions of the Commission on Sustainable Development (CSD-15) to be held in May 2007 and for the Intergovernmental Preparatory Meeting in February. An agreement was reached in New York, and later ratified by the Executive Secretary of ECLAC, Mr. José Luis Machinea, to prepare an input for the CSD-15 in the form of a Conference Room Paper incorporating contributions from all the Regional Commissions. The present document is the result of this initiative and of the collaboration of the RCs.

During the October preparatory meeting for CSD in New York it was agreed that CSD-15 is a Policy Session in which the RCs can participate more vigorously. The Executive Secretaries concurred with that assessment and stressed the need to make additional efforts to submit the Commissions' substantive inputs to the CSD session through a joint paper on the various regional dimensions. This was to be accomplished through a joint background document in the format of a Conference Room Paper for the regional dimension meetings during the Intergovernmental Preparatory Meeting and the CSD session.

The following structure was adopted for the regional contributions:

1. **Introduction: Sustainable development challenges for each region**

2. **Overview of the most relevant issues and main findings on policy lessons concerning the cluster of Energy, Industrial Development, Air Pollution/Atmosphere and Climate Change**

3. **Cross-cutting issues**

4. **Proposals for regional policy and strategies**

Economic Commission for Africa Contribution to Regional Commissions
Conference Room Paper
for CSD-15

1. Introduction: Africa's sustainable development challenges

Africa's foremost sustainable development challenge is poverty eradication. Indeed, the African Ministerial Statement to the World Summit on Sustainable Development (WSSD) identifies poverty eradication as an indispensable requirement for sustainable development. Africa is the only region in the world where poverty has increased in both absolute and relative terms.

In addition to being the poorest region in the world, Africa remains the least developed, the most technologically backward, the most indebted, the most food insecure and the most marginalized. Furthermore, malnutrition, disease, environmental degradation, natural-resource depletion, insufficient infrastructure, unemployment and weak institutional capacities continue to pose serious development challenges for Africa. This situation is exacerbated by recurring natural disasters and the HIV/AIDS pandemic, which is reversing decades of gains in social indicators: the costs of this pandemic in Africa are at least twice as high as those seen in any other developing region, undermining sustainable economic growth. It is striking that Africa is the only continent not on track to meet most of the Millennium Development Goals (MDGs) by 2015.

Sustainable development thrives best in an environment of good governance, peace and security. As armed conflict remains a major obstacle to development in several parts of the continent, fostering an environment of peace and security is one of Africa's foremost development imperatives. In addition to their human and material costs, conflicts impede production, damage infrastructure, prevent the reliable delivery of social services and disrupt societies. Africa is the most fragmented continent, with small, isolated economies. This fragmentation undermines the continent's position in the global development arena. Despite African leaders' long-standing commitment to and emphasis on the need for regional integration, progress in this area has been slow. Hence, integration remains a major challenge for Africa.

Unsurprisingly, the preamble of Africa Chapter of the Johannesburg Plan of Implementation (JPOI) of the WSSD states that since the United Nations Conference on Environment and Development, sustainable development has remained elusive for many African countries, with poverty remaining a major challenge.

2. Overview of the most relevant issues and main findings on policy lessons

Energy for Sustainable Development

The energy sector in a large number of African countries is undergoing a crisis. The sector is characterized by poor technical, economic and environmental performance due to a series of challenges —all urgent— that must be addressed for the continent to break

out of the cycle of energy poverty and make progress towards sustainable development. The Regional Integration Meeting (RIM) identified the following as priority objectives requiring concerted efforts by all actors, including African decision makers and international partners:

- Boosting energy production: Energy supply and services are critically limited by low production of modern forms of energy. This is mostly due to the prolonged unavailability of investment capital for large energy projects, especially those using renewable energy resources, from public and private sources; countries' low technical capacities; and generally inadequate science and technology facilities.

- Significantly scaling up access to and consumption of energy, especially in rural areas: The need to provide sustainable energy in rural areas and to the poor in peri-urban areas must be highlighted. New approaches to promoting diversification of energy resources —which include modern biomass, decentralized energy-generation systems, off-grid schemes, energy utilization for wealth creation and innovative financial and energy-delivery mechanisms based on a bottom-up approach— should be supported.

- Increasing the share of renewable energy in the energy mix: Improving the electricity-generation resource mix is an overriding challenge of sustainable development. Lack of investment, an inadequate policy framework and low technical capabilities are among the numerous causes for the low level of development of Africa’s relatively important resources.

- Making the biomass sector sustainable: Solid biomass, mostly wood, constitutes the predominant energy source for African households. Most often it is used in a traditional, unsustainable manner, posing a substantial threat to human and environmental health. Strategies and actions are required to modernize the sector and make it sustainable.

- Accelerating regional energy integration: Despite the region's relatively strong endowment, many African countries suffer from scarce energy resources and generation and must pay high prices for imported energy. This highlights the need to ensure energy security by more quickly developing intraregional energy transport networks such as oil and gas pipelines and subregional crossborder electricity transmission infrastructure to boost energy trade in Africa. Regional integration bodies and initiatives such as the New Partnership for African Development (NEPAD), Regional Economic Communities and the Commission of the African Union (AU) must be strengthened.

- Reducing energy waste through efficient generation and use: In all likelihood, 30% to 40% more electricity can be made available to Africans through a variety of energy efficiency measures in buildings, power generation and transmission and industry, among other points of consumption. Considerably more efforts should be devoted to developing and implementing these measures.

Industrial Development

Africa lags behind other developing regions in almost every industry-related index. In most countries the per capita manufacturing value added, expressed in dollar terms, has been stagnant or has even declined over the past three decades, despite an economic growth rate above the world average. Africa's share of world manufacturing output declined slightly over the last two decades. Hence, the following issues are viewed as priorities:

- Raising industrial productivity and investment: This can be achieved through strategies focusing on structural issues (domestic capacity-building, strengthening of domestic factor markets, supply of public goods).
- Enhancing industrial performance by exposing firms to international competition, promoting domestic competition, improving access to new technologies and encouraging investment in human capital.
- Spurring investment, particularly private investment and foreign direct investment (FDI), for which a host of constraints, including high investor risk, high taxes and tariffs on investment goods, corruption, macroeconomic instability, and overvalued exchange rates, need to be addressed.
- Initiating a shift to less highly polluting and resource-wasting industrial and production processes. This requires investing in new technologies that use inputs more efficiently and generate less waste along a product's lifecycle, improving awareness of environmental issues and cleaner production processes and establishing an appropriate incentive structure.

Climate Change

On the issue of climate change, the Africa region highlighted the need for all countries, African and non-African alike, to abide by their obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. The region particularly emphasized the following priorities:

- Enhancing and expanding policy research on climate and climate-related issues to promote effective knowledge networking and inform policy and program development in response to climate change-related challenges identified by the UNFCCC;
- Enhancing and promoting policy coherence and the integration of climate change mitigation and adaptation concerns into priority development policies and programmes, including Poverty Reduction Strategy Papers, so as to tackle climate change through a comprehensive approach;
- Giving African countries greater access to the funding and other assistance available through the Kyoto Mechanisms and Marrakech Funds by improving technical and institutional skills;
- Supporting and accelerating the development and implementation of National Adaptation Programmes of Action (NAPAs);

- Building human and institutional scientific capacities and developing international cooperation to address different aspects of climate change, including adaptation at national and local levels where vulnerabilities are most pronounced.

Air Pollution/Atmosphere

On the issue of air pollution/atmosphere, the Africa region has emphasized the need to:

- Encourage all countries to adopt energy efficiency policies, strategies and practices;
- Encourage microfinance institutions to fund cleaner energies and technologies for households and small businesses;
- Promote and adopt an integrated and regional approach for addressing air and atmospheric pollution issues;
- Develop strategies to enhance and retain research capacity, skills and infrastructure to address air and atmospheric pollution;
- Significantly scale up best practices and proven air pollution reduction and mitigation options in all sectors; and
- Scale up data collection and observation capacities and increase activities in these areas.

3. Cross-cutting issues

Recognizing the critical need for additional financial and human resources and the importance of partnering, the African RIM underscored the urgency of mobilizing sufficient resources, both internally and externally, and strengthening partnerships to implement programmes and projects related to energy, industrial development, air pollution/atmosphere and climate change.

The low level of public and private investment, including FDI, and insufficient access to adequate finance are major barriers to implementing commitments made in all sectors. Effective bilateral, multilateral and public-private partnerships have as yet to be developed.

Another major cross-cutting issue is the need for adequate policy, legal and institutional frameworks, as well as for more political will to support the honouring of commitments.

Finally, Africa's low capacity to develop and implement innovative solutions to its problems is mainly due to its inadequate science and technology and human and institutional capacities, as reflected in the small number of scientists and technologists, the ageing university and research facilities, and the absence of national innovation-promotion systems.

4. Proposals for regional policy and strategies

The African region underscores the importance of making regional integration the main strategic approach and recognizes the political leadership of the AU structures and, in

particular, the pivotal role of the AU programme's NEPAD as the best framework for achieving most regional objectives.

Regarding energy, the region proposes:

- Designing and implementing energy-access scale-up mechanisms in rural and urban areas by using energy supply schemes that promote the development of productive and income-generation activities intended to reduce poverty, enhance local entrepreneurship, increase energy consumption capabilities and advance the utilization of indigenous energy resources;
- Enhancing the capabilities of national forestry services and energy agencies to implement wood-energy planning and development so as to promote adequate and affordable bioenergy services and systems and modernize the traditional biomass sector;
- Providing resources and capacities needed by Regional Economic Communities to harmonize national policies and promote regional energy trade, and implementing programmes to reduce energy poverty and enhance energy security at the national level;
- Supporting the establishment of flexible, accelerated investment schemes for developing priority energy and industrial projects such as hydropower systems, and fostering the technical capacities needed to design, implement and monitor these projects.

Regarding air pollution/atmosphere, the region proposes:

- Establishing and fostering regional networks of scientists and institutions to address air and atmospheric pollution in developing countries, through initiatives such as the international project System for Analysis, Research and Training and Air Pollution Information for Africa (APINA), among others.
- Implementing the International Geosphere Biosphere Programme and establishing a Global Atmosphere Watch (GAW) station for sub-Saharan Africa. Such a station would provide measurements for the long-term tracking of green house gases and aerosols and identify the complex atmospheric chemical reactions that determine the depletion, transformation, lifetimes and transport of these gases and particles that contribute to climate change;
- Developing air pollution data collection and observation capabilities in all African countries; and
- Promoting the widespread adoption of improved wood-fuel stoves and cleaner energy sources for cooking and heating.

Regarding climate change, the region proposes:

- Increasing countries' capabilities to assess the impacts of climate change, preparing NAPAs to cope with extreme climatic events and supporting government and private-sector efforts to design carbon-related projects;

- Developing and enhancing innovative technologies, processes and products such as drought-resistant and diversified crops, improved farming technologies, water-conservation and harvesting technologies, the use of efficient non-polluting energy sources and mosquito nets for malaria control and methods for meeting and adapting to the challenges stemming from climate variability and changing climate; and
- Sponsoring climate forums to enhance regional cooperation on climate and improve early-warning and information-sharing systems to reduce agricultural and other vulnerabilities within the region.

Regarding industrial development, the region proposes:

- Facilitating access to financing and technology transfer and acquisition; promoting capacity-building for developing growth-oriented and competitive micro-, small- and medium-sized enterprises (MSMEs) and increasing the empowerment of women so as to encourage the establishment of agroprocessing MSMEs and foster rural development;
- Strengthening metrology, standards, certification, testing and quality-assurance institutions in all the countries;
- Developing industrial environmental policies, regulations and guidelines, including by adopting corporate-social responsibility codes in all countries; and
- Establishing national industrial information networks, promoting capacity-building on information technology and strengthening linkages between R&D institutions and industry.

ECE Contribution to Regional Commissions Conference Room Paper for CSD-15

1. Introduction: The Sustainable Development challenges for the ECE

The United Nations Economic Commission for Europe (ECE) region includes some of the richest economies and some of the poorest nations in the world; those with long and strong democratic traditions and others in transition from centrally planned regimes to more open market-economy-based societies; those with environments almost completely altered by humans and those with still-large proportions of their territory under natural and semi-natural conditions; those with more innovative economies and those with traditional production economies; those that have made important strides in implementing policy reforms towards a more sustainable development and those clearly lagging behind. These differences are a big challenge for the Region.

Member States have repeatedly emphasized the importance of integrating sustainable development into the work of the ECE, and promoting sustainable development has indeed become an important part of its mission.

At the second Regional Implementation Forum in December 2005 member States noted that the ECE region is not yet on track to meet the World Summit on Sustainable Development commitments relating to the thematic clusters of the Commission's fifteenth session. The key challenges the region faces are to increase access to energy services to meet basic human needs and achieve sustainable industrial development while reducing energy-related environmental and health problems, in particular those stemming from air pollution and climate change.

2. Overview of the most relevant issues and main findings on policy lessons concerning the thematic clusters in the region

Energy

Energy poverty exists in the region because energy is unaffordable and accounts for significant portion of disposable income. The traditional division of labour in many countries allocates a large share of household tasks to women, who are disproportionately affected by energy-poor households.

Energy security has re-emerged as a crucial issue for policymakers and the general public. Various factors have heightened concerns and contributed to apprehension regarding energy availability and the security of energy supplies over the past six years. These factors include, inter alia, rapid economic growth; increasing reliance on external energy supplies; the 2003 electric-power blackouts in North America and Europe; and the disruption of natural gas supplies in early 2006 in Europe.

Energy efficiency and energy savings have been identified as key contributors to energy sustainability and areas where the ECE region can make substantial progress. Energy-

efficiency measures yield a net cost benefit as well as many ancillary economic and environmental benefits. Energy intensity in the economies in transition remains high relative to levels in Western European countries. A huge potential exists to further reduce energy intensity and improve energy efficiency in virtually all sectors: manufacturing, residential, commercial, municipal and transport.

The conundrum of how to deliver needed energy services while minimizing energy-related health and environmental problems remains to be solved. Meeting this challenge requires improving the quality of the energy mix, increasing the use of renewable energy and promoting R&D in new technologies.

Increased transport demand has led to growth in transport energy consumption. Energy consumption and emissions are expected to rise rapidly in Eastern Europe, Caucasus and Central Asia (EECCA) as economies recover and transport demand increases. Sustainable transport strategies that ensure the commitment and involvement of all relevant national and local parties are essential for both restraining traffic growth and promoting more environmentally friendly and energy efficient transport without compromising the competitiveness of the sector or the economy in general. Strategic environmental assessment (SEA) can be a useful tool to help integrate sustainability concerns at various transport policy and planning levels; therefore, the ECE Protocol on SEA should be ratified and implemented by as many countries as possible. The Transport, Health and Environment Pan-European Programme addresses key challenges for the region to achieve more sustainable transport patterns and a tighter integration of environmental and health concerns into transport policies.

The ECE Committee on Sustainable Energy has undertaken considerable capacity-building initiatives in sustainable energy and, in particular, in promoting energy efficiency measures and a reform of energy prices and subsidies. Its project on Financing Energy Efficiency Investments for Climate Change Mitigation will provide for the establishment of a public-private partnership dedicated fund to finance energy efficiency investments between ECE countries and economies in transition. The project is currently promoting the formation of an energy efficiency market in EECCA so that cost-effective investments can provide a self-financing method for reducing greenhouse gases (GHGs).

ECE also facilitates the development of coal mine methane (CMM) projects, which offer economic, social and environmental benefits to local communities. A project is underway to overcome the technical, economic and institutional barriers to developing such projects in Central and Eastern Europe (CEE) and EECCA and will result in a roadmap for financing CMM projects and a toolkit to assist potential project sponsors.

ECE has issued a set of guidelines for policymakers on reforming energy prices and subsidies (ECE/ENERGY/54). The guidelines were endorsed by environment ministers in Kiev, Ukraine, in May 2003. A follow-up assessment of the impact and extent of the implementation of these guidelines across the ECE region will be undertaken.

Industrial Development

Industrial development is an engine for poverty eradication and economic growth, which need to be based on economically, environmentally and socially sound policies. Adopting such policies enables a mutually reinforcing relationship between environmental protection, competitiveness and social cohesion. Such a relationship is necessary to avoid unsustainable development and hence a negative impact on the global climate, ecosystem damage and detrimental effects on human health and people's livelihoods.

The aim of the ECE Convention on the Transboundary Effects of Industrial Accidents is to improve industrial safety and harmonize safety standards across the ECE region. The Convention facilitates cooperation among Parties to prevent as well as to prepare for and respond to industrial accidents. The implementation of the Convention is relatively advanced in Central and Western Europe, although the EECCA and the South East European (SEE) countries face many challenges in implementing it. To help EECCA and SEE countries implement the Convention and improve safety at hazardous industrial facilities, the Conference of the Parties launched an internationally supported assistance programme in 2004.

Air Pollution/Atmosphere

Although the region has made progress in reducing air pollution, urbanization combined with increased transportation and energy use has led to a rise in overall air pollution, negatively affecting human health and causing environmental degradation, including through climate change.

In both developed and developing countries, ambient air pollution is a growing public health concern. In addition to domestic sources, transport, industry and power generation are all contributing factors. In the ECE region, increasing transport demand is a significant cause of air pollution.

The ECE Convention on Long-range Transboundary Air Pollution and its protocols have effectively reduced air pollution across large areas of the region. The Convention Secretariat is undertaking outreach efforts to share the Convention's experience in reducing air pollution with other regions and to address the increasingly prominent problems caused by the intercontinental transport of air pollution. The growing involvement of non-ECE states in the Convention's activities sets the stage for inter-regional cooperation on air pollution problems.

Climate Change

Even though many countries are making considerable efforts to control GHG emissions, much stronger measures are needed to prevent predictions of a warmer climate with increased risks of extreme events from being fulfilled. To meet the objectives of the Kyoto Protocol, significant investment in energy efficiency is needed, especially in Eastern and South Eastern Europe and the Commonwealth of Independent States. These regions have the highest carbon emissions as well as those that can be reduced in the

most cost-effective manner. To achieve such reductions, it is important to address such issues as policy barriers, inadequate financial engineering skills and the lack of appropriate financing mechanisms.

3. Cross-cutting issues

It is very important that each of the thematic issues be integrated into national policies and programmes. This includes national sustainable development strategies, for which the World Summit on Sustainable Development agreed upon a 2005 target; and comprehensive development strategies (e.g., regarding poverty reduction), which the recent United Nations World Summit agreed should be adopted by 2006.

National governments should deploy a mix of policy instruments, combining best regulatory practices, market mechanisms and voluntary measures.

The development of affordable and environmentally sound technologies is essential for progress throughout the thematic cluster. Further efforts are needed in research, development and deployment (R, D&D), technology support, transfer and access.

To enable governments and stakeholders to implement commitments, capacity-building is essential both within the ECE region and in developing countries, including through education and information. The ECE Strategy for Education for Sustainable Development, adopted in 2005, provides a practical instrument to incorporate key sustainable-development themes in all education systems. Countries agreed to develop indicators to assess the implementation of the strategy, organize thematic and subregional workshops and compile good practices in education for sustainable development.

4. Proposals for regional policies and strategies

Energy issues need to be better integrated into development planning and reflect interactions between energy policies and those addressing economic development and the environment, including climate change and atmospheric pollution, health and industrial and regional development.

The ECE region offers a huge potential for energy efficiency and energy savings. However, barriers need to be overcome to reap the full potential of energy efficient measures. This will require education and awareness raising, behavioural change, regulatory and energy-pricing reforms, emissions trading and adequate financing instruments.

Security of supply is of particular concern to the ECE region and needs to be reinforced by diversifying both geographical and fuel sources, securing adequate investment in production, transport and distribution infrastructure and deepening political dialogue between producer and consumer countries.

Energy supply diversification should include increasing the share of renewable energy in line with the ECE regional commitment before 2015 (WSSD target); decreasing the environmental impact and carbon intensity of fossil fuels; and improving the energy efficiency of energy transformation and networks.

The ECE region has a leading role to play in increasing R, D&D of energy technologies, reducing unit costs and making these technologies available to countries with emerging and developing economies.

Sustainable consumption and production are essential to achieving sustainable industrial development, and requires programmes that improve access to affordable, clean and efficient technologies, backed by cooperation between countries on regulatory and administrative issues.

Engagement with business is critical for achieving sustainable development. Further development and promotion of corporate social and environmental responsibility and accountability in support of this role are needed. This should include capacity-building, for small and medium-sized enterprises (SMEs) to better target social and environmental concerns.

Recent studies on the links between air pollution and GHG emissions have shown that significant reductions can be achieved through integrated approaches. Such approaches should be developed further, taking special care to explore trade-offs, e.g., the use of wood for fuel, which increases particle emissions but reduces greenhouse gases.

ECLAC Contribution to Regional Commissions Conference Room Paper for CSD-15

1. Introduction: The SD challenges for ECLAC

The Latin American and Caribbean (LAC) region is currently at a crossroad with regard to more sustainable development. The cluster selected for CSD-15 —Energy, Industrial Development, Air Pollution/Atmosphere and Climate Change— encompasses some of the most challenging issues for the region's sustainability strategies, at both the national and the international levels.

After countries made an important effort during the 1990s to strengthen their institutional and legislative environmental frameworks, the first years of the new century have seen slower progress —hence the need for renewed efforts to enforce regulations and improve the integration, coherence and coordination of public policies. Institutional strengthening and attempts to elicit the interest of citizens and the productive sectors and encourage them to become more involved continue to be fundamental challenges on the road to sustainable development.

Technological and productive gaps between countries are widening, and the region is facing crucial technological challenges to its insertion in the global economy. Meeting such challenges requires access to modern and cleaner technologies, receptive environments in countries using them and real incentives to the companies producing them. Furthermore, the region is unequal in both poverty levels and pollution linked to consumption patterns. Although biodiversity is a regional asset, its degradation is cause for much concern. High levels of urbanization are seen in all countries, which means increased ecosystem strain.

However, consolidating the progress made in achieving the sustainable development goals, including those set forth in the Millennium Declaration, the JPOI and the Latin American and Caribbean Initiative for Sustainable Development, will require identifying financial sources in the region, including national entities, official assistance for development and other resources for international cooperation.

2. Overview of the most relevant issues and main findings on policy lessons concerning the thematic clusters in the region

Energy

- Energy uncertainties and integration efforts regarding fossil fuels. The region is unevenly endowed in energy resources. Electricity consumption is expected to increase sharply in the region. Moreover, the use of natural gas to generate electricity is expected to become increasingly important, due to the adoption of the combined cycle as the main electricity generation technology. This expectation has, in turn, spurred the integration of the productive chains of electric energy and natural gas, because of high oil prices and the

business opportunities resulting from electric companies' difficulties in relation to the gas supply.

The countries of the region have made promising advances in energy integration. This is especially the case in clusters of countries (Andean and Central America). Nonetheless, although some initiatives are already underway, stronger integration patterns (mainly in South America)allowing the region to overcome its unequal provision of energy resources are still required.

- The challenges of renewable energy sources. Renewable energy sources have been insufficiently developed, and the region's hydro-energetic potential is still untapped, as it accounted for only 15% of total supply in 2004. Hence, the energy reforms of the 1990s failed to lead to the development of the hydroelectricity potential that had been predicted in the previous two decades. Nevertheless, the Latin American region, led by Brazil and Central America, has taken some interesting initiatives in favour of incorporating a bigger share of biofuels in its energy strategy.

The appropriate control of firewood use continues to present challenges, due to its important local impact in Latin American cities including, increasingly, in Central America and the Caribbean. Although sustainable firewood is a type of renewable energy, changes are required in the way it is used, since it continuous to be highly important for the poorest.

Given the significant cost gap between fossil fuels and hydroelectricity versus renewable energies, the share of renewable energies used in the LAC region is projected to increase only slightly. No structural modification in the countries' energy mix is expected, particularly concerning energy for electricity generation. Therefore, emphasis must be placed on energy efficiency, changes in the regulatory frameworks, financial instruments and incentives to foster a larger share of renewable energy sources in the total mix.

- Access to energy. This topic links energy with social development. Energy policy must leave room for endogenous local development, which normally focuses on major demand components. Some countries of the region are affected by energy deficits, and the energy coverage deficit of the poorest sectors must be addressed through public action. Access to higher quality energy (mainly LPG and electricity) is a necessary condition for achieving all eight Millennium Development Goals. Many poor families still depend on traditional biomass, which entails health hazards, as their main energy source. The United Nations Development Programme views access to energy as a means to progress towards meeting human development objectives.

- Energy efficiency. Energy efficiency (EE) has been embraced as a priority by many LAC countries, and a number of initiatives are now underway. Some examples of best practices are described below:

Some experts see EE as a response to the dependence on imports, particularly of natural gas. Others view it as a way of postponing costly investments in new generation facilities.

Many countries have established programs to promote more efficient energy use, public-private committees to ensure business' commitment to social and environmental actions and have implemented economic instruments designed to foster EE. Some measures also focus on SMEs. In addition, biofuels laws have recently been passed. Such best practices also include the creation of energy services enterprises that help companies develop EE programs. There has been some South-South cooperation in this area. The Central American Commission on Environment and Development, in the context of the Environmental Plan for the Central American Region, has been promoting a Strategy on Energy Efficiency Policy. This initiative includes the Dominican Republic. Regulatory mechanisms, strategic planning, scientific research and private-sector commitment are the foundation of these initiatives.

Industrial Development

Industrial development in Latin American and the Caribbean has been characterized by opening up to transnational capital and by increased exports and dependence on imports. Industry intensive in natural resource, both "renewable and non-renewable", has been decisive in attracting foreign capital and has heightened the debate on the sustainability of such strategies.

On the social development side, more than 95% of firms are SMEs, which make a substantial contribution to employment creation. Industrial activity puts a strain on energy resources, contributing to environmental degradation, particularly air/atmosphere pollution, both through production itself and through the transport patterns associated with it.

- Industrial urban pollution control practices. Some of the most industrialized countries in the region have promoted environmental policies to curb industrial pollution. Recently, however, other countries have relaxed their environmental policies and enforcement as well as their restrictions on hazardous waste imports in order to promote private-sector development and remove certain obstacles attributed to environmental regulations.

- Identification of innovative policies and relevant experiences. Countries have gradually implemented cleaner production policies, due to the more advanced countries' success in involving the private sector in environmental protection and ensuring compliance with regulations, based on an approach that does not impede modernization or improved competitiveness.

The policy of promoting clean production was the result of the convergence of visions among public actors, especially regulators and tax inspectors, and private entrepreneurs and labour unions. This policy seeks to facilitate private-sector compliance with environmental requirements or workplace health and safety regulations. In addition, it promotes cross-cutting environmental/industrial initiatives that link competitiveness, market access and sustainability and set an example of a successful approach to achieving sustainable industrial processes.

Air Pollution/Atmosphere:

Experiences in countries with urban pollution control plans have sparked interest in other countries to more effectively tackle this growing problem. Pollution cleanup plans encourage the introduction of an integrated set of strategies and instruments, making it possible to mobilize different groups of public stakeholders as well as private firms, citizens and interest groups. These experiences also lead to sustainable transport programs, comprising sustainable mass transport, urban planning, green areas, bicycle infrastructure, etc. There are various experiences of this type in the region.

Climate Change

LAC is highly urbanized and fast growing transport accounts for one third of air pollution in most important cities. This, plus emissions from industry and deforestation, imply growing contributions to CO2 emissions, though very small compared to most developed countries, both in absolute and per capita terms.

Many countries in the LAC region are at increased risk from natural disasters as a consequence of climate change. Important efforts have been made, particularly in the Caribbean and Central America, to prevent damage from natural disasters. The actions being carried out include the building of infrastructure and the preparation of response-procedures manuals, among various other initiatives.

The Kyoto Protocol and its related market is still a modest incentive for countries to produce Clean Development Mechanism (CDM) proposals for global environmental services, with co-benefits for air quality. Yet, most countries are developing CDM projects.

Latin America is the leading region in the world market of carbon credits, with almost half of the projects presented (though not in terms of reductions, where Asia leads). The most promising project's potentials identified in the region are on biomass for heat and power, domestic solid wastes for methane capture, hydroelectric projects, sinks, and the use of animal wastes from agro-industry for methane. The development of biofuels appears also as an interesting way of fuel switching and access to CDM. However, no methodology has been approved so far.

Sink projects are of high interest for LAC but remain very weak in the CDM,. Transport projects and methodologies are very underrepresented in spite of the urgent need of its improvement in LAC cities. Recent innovations in this field still lack recognition by the CDM. The production of country inventory of GHG emissions is still a challenge with very few exceptions.

3. Cross-cutting issues

Countries in the region are trying to reduce trade-offs among economic, societal and environmental progress. Further efforts are needed in economic policy (through fiscal, public and private agreements and incentives for sustainable development), energy policy and international trade policy, if countries want to benefit from globalization in a sustainable way.

The foregoing discussion allows the several critical cross-cutting issues for the LAC region to be identified:

- The need to establish national and international funding rules to foster cleaner investments, the recovery of environmental liabilities and compensation for non-renewable resource depletion;
- Institutional stability, as a requirement for the permanence and strengthening of policies;
- The integration of public policies for the attainment of sustainability goals, in particular when sectoral action is necessary to ensure full implementation;
- The measurement of sustainability through appropriate indicators;
- Strategic environmental evaluation of policy options and development projects;
- Education and training.

4. Proposals for regional policies and strategies

- Encouraging public authorities to have the political will to ensure that sustainable development is seen as relevant and receives institutional backing, particularly concerning energy and industry, which are normally governed by sectoral policies;
- Bringing about explicit public-private commitments for national, regional, provincial/state, local/municipal governments and the business sector (large firms, SMEs, microenterprises) to work jointly on the most critical environmental problems and overcome regulatory barriers;
- Establishing participation mechanisms that allow the public to be more informed and that guarantee that its opinions will be taken in account;
- Reinforcing territorial-planning instruments, which have not attained the prominence they deserve in Latin America and the Caribbean, since market-based criteria tend to prevail over social interests and the needs of the ecosystem, especially regarding soil degradation and biodiversity loss;
- Setting up national instruments along the lines of the Strategic Environmental Impact Assessment (vis-à-vis policies, plans and programs), to allow for a broader vision than that of the project assessments currently applied in almost every country of the region;
- Reducing indoor environmental pollution;
- Allowing for horizontal cooperation among the LAC countries, as a basis for integrating environmental and similar or related matters with energy and climate-change topics;
- Estimating future increases in pollution from transportation, industry, urban growth and the energy demand needed for these activities;

- Identifying regional/subregional agreements that allow for stricter environmental requirements while protecting competitiveness;
- Promoting the inclusion of sinks in the CDM, as well as a reform of the CDM, to make it more relevant for initiatives to reorient national policies;
- Requiring transnational banks and trade agreements to support cleaner technologies;
- Deepening and invigorating air-quality programs in LAC cities;
- Improving public transportation and making it a priority of public investment.

ESCAP Contribution to Regional Commissions Conference Room Paper for CSD-15

1. Introduction: The SD challenges for ESCAP

As it continues along its path of rapid economic, the Asia and the Pacific region is facing increasingly serious challenges to and constraints on implementing further actions for sustainable development. Being the largest region in the world, with diverse subregions ranging from developed economies to Small Island Developing States and economies in transition, it has many unique features that need to be taken into account in setting sustainable development (SD) strategies. Despite its impressive economic growth, the region is still home to two-thirds of the world's poor and struggles to overcome the increasing environmental pressure exerted by that rapid economic growth. The most recent State of the Environment in Asia and the Pacific report (SOE 2005), by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), notes that the region is already running the highest ecological deficit of any region in the world, notwithstanding its still-low per capita ecological footprint. This is because it is the region of the world with the most limited ecological carrying capacity.

With the countries of the region pursuing an export-driven economic development strategy that capitalizes on their cheap labour, the region has emerged as a leading global production centre. The region attracts huge amounts of FDI to fuel its growth. According to the United Nations Conference on Trade and Development World Investment Report 2006, the Asia and the Pacific region's share of global FDI inflows was 22.2% for 2003-2005, a sharp increase above the 11.8% recorded for 1998-2000. The region's rapid economic growth and its emergence as a global production centre create additional challenges to its sustainability. While export products are shipped to overseas markets, the pollution arising from the production process remains in the region, thus further straining its limited ecological carrying capacity. As higher growth leads to rising purchasing power for the region's consumers, unsustainable consumption patterns are now spreading throughout the region, placing an additional burden on its already high ecological deficit.

The critical, unique challenge faced by the region, therefore, is to maintain the high economic growth needed for poverty reduction without creating further environmental pressure due to production and consumption patterns that are incompatible with the region's limited ecological carrying capacity, and to thus ensure environmental sustainability. In response to these challenges, the countries of the region adopted a new approach consisting of "environmentally sustainable economic growth" (or "Green Growth") at the 5th Ministerial Conference on Environment and Development held in March 2005 in Seoul, Republic of Korea. The United Nations Economic and Social Commission for Asia and the Pacific is now actively promoting this new Green Growth approach by focusing on policy options in favour of more ecologically efficient economic growth and the creation of synergies between the environment and the economy.

Some of the specific challenges are described below:
(1) The region must find ways to guarantee energy security so as to maintain its economic growth and provide and expand access to equitable energy services without jeopardizing its long-term prosperity and environmental sustainability.
(2) Air pollution is a major health hazard in the region. In many cities air pollution is having a negative impact not only on the quality of life but also on economic competitiveness. Some cities are losing FDI due to worsening air pollution. In rural areas, indoor air pollution caused by poor techniques for burning biomass is a serious health hazard.
(3) Given that pollution-intensive industries dominate manufacturing and production in many parts of the region, ways must be found to prevent industrial production processes from threatening environmental sustainability and social equity.
(4) Asia accounts for around 40% of total global GHG emissions and this proportion is expected to increase as economic growth continues. There is an urgent need to decouple economic growth and industrial development from rising GHG emissions by promoting a low-carbon economy, especially since the region is already suffering heavily from natural disasters caused by climate change. Helping the agricultural sector adapt to climate change is another serious challenge that must be addressed.

2. Overview of the most relevant issues and main findings on policy lessons concerning the thematic clusters in each region

In Asia and the Pacific, lessons learned from the past have been taken into account to develop innovative policy options for promoting sustainable development. For each of the four thematic issues, the following overview illustrates important issues to be addressed in the region.

Energy

In the Asia and the Pacific region, fossil fuel-based energy resources continue to play a predominant role in the energy supply mix. However, as only a few countries in the region are endowed with abundant energy resources, effective policies and strategies are needed to accelerate diversification of clean energy resources and the use of advanced environmentally sound technologies (ESTs) to improve energy efficiency. Diversification of the energy supply mix continues to be important for broadening the access to energy. In essence, policies to diversify energy supply by developing advanced, cleaner, more efficient, affordable and cost-effective energy technologies, including fossil fuel technologies, are essential.

In the effort to enhance energy security, energy efficiency and conservation have vital roles to play. Rising oil prices, and the goal of lessening the reliance on imported energy resources, creates greater opportunities to realize the benefits of energy efficiency, alternative energy resources and low-emission technologies. Regional and subregional cooperation in support of an efficient energy-distribution system may complement national efforts to promote energy development, savings and trade. The region needs to promote regional energy cooperation, as there are countries with surplus energy resources for export and other countries requiring imported energy.

Industrial Development

Industrial development has been the main driver of rapid economic growth, but also a source of pollution and social tension. The region has to shift towards a new paradigm of industrial development without jeopardizing environmental or social sustainability.

SMEs have greater difficulties in obtaining resources and technical capabilities with which to develop and utilize effective measures for reducing pollution, raising productivity and enhancing resource efficiency; hence, policies are needed that provide support and technical assistance for SMEs to promote and expand ESTs, including technologies to reduce waste and promote the reuse and recycling of resources and products (the "3Rs").

Air Pollution/Atmosphere

Air/atmospheric pollution is the end result of the mismanagement of energy and industrial development policies. Since both urban air pollution and indoor air pollution in rural areas have a serious detrimental impact on the quality of life and health, the countries of the region need to integrate air-pollution control into their energy-consumption and industrial-emission standards.

Institutional mechanisms and national strategies for air quality management are essential for mitigating pollution problems. More stringent policies to curb the deterioration of air quality resulting from improper energy use are crucial for improving indoor and urban air quality and bringing transboundary pollution under control and for lessening the harmful effects on human health, particularly on women and children. Greater efforts must be made to switch to cleaner and more efficient fuels in transportation systems and industrial production without compromising economic growth.

There is a significant need to draft regulations on ambient air pollution and emissions as well as to strengthen existing regulations; develop air pollution and source emissions (stationary and mobile) monitoring and control programmes; and train nationals in air-pollution monitoring, analysis and interpretation and in the assessment of air-quality data.

Climate Change

As oil prices rise, climate action becomes increasingly compatible with the region's economic development goals such as energy security and industrial competitiveness. Meeting the climate change challenge requires a broad range of measures for both mitigating climate change and adapting to its adverse effects. These include further energy efficiency improvements, alternative-energy and carbon-capture and storage technologies and changes to unsustainable consumption and production patterns and to coastal zone management and agricultural practices. Of immediate importance is the need to integrate climate change policies into national development plans to mitigate the harmful effects of rising temperatures. In addition, adaptation measures for agriculture, energy, forestry, human settlements, industry and marine ecosystems have to be strengthened to mitigate adverse impacts on water resources and coastal zones.

Energy efficiency technologies offer win-win opportunities to simultaneously lower production costs, enhance energy security and reduce air pollution and GHG emissions. A wide range of low-cost policy measures have proven effective in improving energy efficiency. These measures include removing electricity subsidies and introducing peak hour surcharges and energy efficiency regulations for industrial processes and urban activities.

Asia and the Pacific is actively taking part in CDM activities. By December 2006 the region had a total of 218 CDM projects, which accounted for 71% of all global emission-reduction projects registered under the UNFCCC. A recently initiated, proactive effort includes a unilateral CDM that gives developing countries flexibility in initiating CDM projects and assuming the concomitant risks.

3. Cross-cutting issues

Four focus areas should be integrated into national development plans, because they comprise cross-cutting issues that are interlinked with other sectors. Moreover, a number of critical cross-cutting issues should be considered for integration with the four focus areas and for inclusion into national development planning. These issues include fiscal and investment policies to internalize environmental costs; the promotion of sustainable production and consumption patterns and sustainable infrastructure to support ecologically efficient economic performance; the dissemination of ESTs; and the promotion of green business and the involvement of the private sector in turning environmental sustainability into business opportunities.

The cross-cutting issues that should also be addressed also include finding ways to link energy efficiency measures with industrial competitiveness; to promote compatibility between climate actions and economic growth; to improve the ecological efficiency of the transport sector in order to reduce urban air pollution; to minimize the impact of natural disasters caused by climate change; and to apply sustainability criteria in infrastructure development.

4. Proposals for regional policies and strategies

A transition towards sustainable development requires a paradigm shift. Such a shift entails directing priorities and resources towards eco-efficient practices and pursuing development in line with the region's ecological carrying capacity by adopting an environmentally sustainable economic growth approach. The region has to improve its ecological efficiency through greater resource efficiency and pollution control in order to maintain high economic growth in the face of rising natural resource prices and its limited carrying capacity. The region also has to promote sustainable production and consumption patterns by internalizing environmental costs into market-price mechanisms and by strengthening demand-side management, thus promoting eco-friendly industrial development and energy security. This will ultimately lead to a decoupling of climate change and air pollution from rapid economic growth.

Proposed policy and strategy options include, *inter alia*, the following components of a sustainable approach for the road forward:

- Concerning sustainable energy use, policies to turn rising oil prices into an opportunity are essential, so as to improve energy efficiency and diversify energy supplies by developing advanced, efficient, renewable and cost-effective energy technologies, including fossil fuel technologies. Policies to link energy efficiency to industrial competitiveness should also be actively pursued.
- Investment policies that will render national development planning more environmentally sustainable have to be explored. And, since FDI plays a significant role in many countries of the region, policies to encourage FDI to be a driving force of sustainability in the region should also be adopted.
- In particular, infrastructure-development investment strategies should integrate the concept of sustainability by reflecting the ecological impact caused by long-term infrastructure use. Currently, environmental impact assessments mainly reflect the impact from the construction of infrastructure projects. SEAs have to be more actively applied to infrastructure development in order to make infrastructure the foundation of ecologically efficient economic performance. Investments in transport infrastructure need to focus more on rail transport, in view of its ecological efficiency and low carbon emissions compared with highway transport.
- A fiscal policy capable of promoting sustainable production and consumption patterns needs to be systematically pursued. Pricing that reflects not only economic value but also real environmental costs is critical in reorienting economic development planning towards environmentally sustainable economic growth.
- In view of the region's limited natural resources, resource efficiency improvement polices should be actively promoted so as to enhance the sustainability of the four focus areas. Resource efficiency initiatives already taken by the Chinese government could serve as a model for the region.
- Economic policies to strengthen compatibility between climate actions with economic growth should be actively identified and implemented. The unilateral CDM modality has to be actively promoted as an incentive mechanism for low carbon investments in developing countries. Policies for adapting to climate change and measures to minimize the impact of natural disasters caused by climate change need to be improved.
- Policies to reduce urban air pollution in the region's mega-cities have to be pursued. In particular, demand-side management to control the number of cars in the cities and promote public transport and cleaner fuel is critical.

ESCWA Contribution to Regional Commissions Conference Room Paper for CSD-15

1. Introduction: The SD challenges for ESCWA

The energy sector has played a crucial role in Arab countries' socioeconomic development. This sector is characterized by huge oil and gas output and high electricity production, predominantly thermal power generation. Over the past three decades the Gulf Cooperation Council countries have witnessed an unprecedented economic and social transformation as oil proceeds have been used to modernize infrastructure, create employment and improve social indicators. These countries have become an important centre of regional economic growth. However, the non-oil-producing countries are presently experiencing economic stagnation with a bleak outlook for solving acute problems in unemployment and social services.

Several challenges are undermining the fulfilment of energy-related objectives for sustainable development in the region. Among these challenges are rapidly rising energy demand, a dearth of reliable energy supplies in poor rural and urban areas, the need to improve energy production and consumption efficiencies, limited support for renewable energy development and a lack of appropriate mechanisms to support the transfer of advanced energy technologies to the region.

Addressing freshwater scarcity is the top priority in the Arab countries characterized as semi-arid to arid. The main causes of water problems are competition for water between the urban, industrial and agricultural sectors and ineffective water management policies. Environmental degradation in the region is attributed to increased pollution associated with rapid industrial development, improper end-of-pipe treatment of generated waste, difficulties in monitoring emissions and enforcing environmental regulations, and insufficient strategic planning to minimize waste generation. Furthermore, the region's political instability impedes any attempt to address natural-resource pollution.

2. Overview of the most relevant issues and main findings on policy lessons concerning the thematic clusters in each region

Energy for Sustainable Development

Arab countries have achieved remarkable success in introducing cleaner and more advanced fossil fuel technologies, by, for example, switching to natural gas, upgrading oil-refinery technologies, improving fuel specifications and adopting vehicle inspection and maintenance programmes. Regional integration projects for electricity grid interconnection and gas networking have made considerable progress in recent years. A number of subregional projects are at varying stages of implementation and operation.

The region has strong prospects for renewable energy development, particularly in rural and remote areas. Countries such as Egypt, Jordan, Tunisia, Morocco, Syria and Yemen have embarked on ambitious renewable energy resource plans and programs for many

years. The United Arab Emirates is setting is a very useful example to other oil-producing countries in the region with its first wind farm power plant. The regional promotional mechanism on energy systems for sustainable development of the United Nations Economic and Social Commission for Western Asia (ESCWA) is a regional network of authorities that has effectively fostered regional cooperation, advocated the development and field application of renewable energy systems and promoted the capacity-building of national professionals.

Although the region is considered rich in energy sources, more than 21% of the rural and poor urban population does not have access to modern energy services or is highly underserved. Among the major challenges faced by the Arab energy sector are improving accessibility to modern energy services and meeting the growing energy demand resulting from population and economic growth. It has been recognized that a number of barriers need to be overcome, such as a lack of market incentives and financing mechanisms, weak institutional capacities and insufficient research and development capabilities.

Most member countries are oil producers and have their own concerns regarding the balance between achieving energy-sector sustainability vs. securing their revenues and furthering development opportunities. Arab countries have adopted policies and programmes to encourage energy conservation and efficiency in various economic sectors, particularly the residential, industrial, transport and electricity sectors. Programmes are being implemented by Egypt, Jordan, Saudi Arabia, Qatar and Lebanon.

A partnership on energy for sustainable development was established through the Council of Arab Ministers Responsible for the Environment, in close cooperation with ESCWA and the United Nations Environment Programme/Regional Office for West Asia. Several Arab countries have issued widely publicized declarations expressing their concern with and commitment to achieving sustainable development.

Industrial Development

Arab industry is increasingly recognizing the need to minimize waste generation by introducing new and cleaner production technologies. Public and private sector decision makers increasingly regard pollution prevention as a dynamic concept that entails the gradual development of technical expertise and better environmental management. This trend has resulted in progressive improvements in production and consumption patterns.

Most Arab countries have recently adopted national environmental action plans. In some cases, these plans are reinforced by industrial-modernization strategies or explicitly require environmentally friendly technologies or appropriate resource use. Some countries expressly advocate recycling as part of their general waste-management policy, and others have begun enforcing zoning and regional-planning policies for industry-intensive regions to avert the health and environmental consequences of industrial development. Although the application of a “polluters pay principle" has not been favourably received by entrepreneurs, the relatively high charges levied by wastewater

authorities in Arab countries have raised operating costs for industry. Nevertheless, where service charges are nominal, industries find it less expensive to continue polluting.

One of the most widely recognized barriers to sustainable industrial development is scarce financial sources for modernization projects. Some countries have addressed this constraint by establishing national funds for environmental improvement projects. International institutions and assisting agencies from these countries are supporting such projects as well as providing expertise to local institutions to promote sustainable industrial development.

The private sector of many Arab countries is dominated by SMEs. However, this sector is not sufficiently involved in technology transfer or in investing in the manufacture of cleaner production equipment. Government-industry partnerships do not involve local communities or financing institutions. SMEs still find it difficult to access financial and technical assistance.

SMEs must also overcome serious hurdles in the form of the growing number of national and international environmental regulations. Consequently, NGOs and private-sector organizations have developed various support mechanisms. Programmes for SMEs focus on improving their performance through training, access to credit, business consulting, improved access to information, technology development, marketing assistance, etc.; but very few programmes specifically address the impact of economic globalization and inter-firm cooperation or encourage networking and clustering to improve competitiveness.

Air Pollution/Atmosphere

There are two critical areas in the Arab region: (1) the Mediterranean Basin, where most countries —in particular Lebanon and Syria— are planning a significant expansion of their protected areas; and (2) the Horn of Africa, whose Arab countries (Djibouti and Somalia) have very few protected areas. Yemen's Socotra Archipelago is the only area with a project that helps local residents practice conservation and that promotes the sustainable use of land and natural resources.

Arab countries are developing approaches to reduce the regional impact of air pollution in the various power, transport and urban-planning sectors. Natural gas is abundant in the Arab region and production outstrips total consumption. There are plans to increase the share of natural gas used in the power sector's fuel mix. Natural gas accounted for almost 50% of primary energy supplies in 2000, and in Qatar, Bahrain and Egypt the figure was 80-90%.

Egypt has introduced a national policy to support a switch to natural gas vehicles in Cairo. More than 47,000 such vehicles are already in use, and 70 vehicle-fuelling stations are operating. Syria is also considering such a switch. Pilot projects to use fuel cells for buses are also being considered in some countries.

Climate Change

Although the impact of climate change on the Arab world has not been fully examined or understood, it is likely that this impact is quite significant. Arab countries need to implement adaptation measures to minimize the effects of climate change on the most important socioeconomic sectors.

One of the most serious limitations of the assessment process has been the lack of capacities with which to evaluate vulnerability and adaptation so as to generate reliable results and incorporate them into national development planning processes. This limitation stems mainly from inadequate data collection and monitoring, limited access to existing databases and the lack of capacity to analyze, adjust and improve quality assurance in some data sets.

The Arab region is comprised of Non-Annex I Parties and therefore stands to benefit from the Kyoto CDM. Several CDM activities are being implemented at the national level regarding energy efficiency and renewable energies. The Gulf region holds great potential for carbon capture and storage projects with enhanced oil-recovery technology. Moreover, this technology has the potential to achieve the highest emission reductions possible. Once this technology is adopted as a CDM-approved methodology, certain Arab regions will become an attractive market for emissions trading.

3. Cross-cutting issues

Arab countries need technology transfer and capacity-building to select appropriate technologies in different areas related to programs in renewable energy, energy conservation, cleaner production, climate-change mitigation and adaptation and air-pollution monitoring.

Support is needed from the international community to build institutional structures and create an enabling environment regarding adequate sustainable development-related policies, including the removal of technical, legal, social and administrative barriers and the introduction of regulatory frameworks related to the transfer and development of new technologies.

The provision of financial assistance to some Arab countries, especially the least-developed ones, is crucial for planning and implementing measures to respond to and mitigate the potential impacts of climate change.

Public awareness and participation should be promoted through an increased flow of information from industry and government to the public and other stakeholders and vice versa.

4. Proposals for regional policies and strategies

Energy for Sustainable Development

- Expanding investments in oil and gas exploration and production through cleaner technologies and measures to reduce the sector’s environmental impacts;

- Promoting the use of natural gas in the power and transport sectors and upgrading energy production and consumption efficiencies, particularly in energy-intensive industries, transport and the power-generation sector;
- Developing renewable energy technologies and promoting their application as appropriate to each country's needs and resources; and mobilizing funds for capacity-building, technology transfer and energy systems to meet increased energy demand.

Air Pollution

- Upgrading air-pollution monitoring and control programmes and continuing to monitor atmospheric meteorological profiles, for better interpretation of air-pollution dispersion dynamics;
- Promoting effective urban planning by providing cities with support systems that are environmentally sound and have low energy consumption;
- Supporting sustainable transport programs, continuing with efforts to phase out leaded gasoline and replacing ageing vehicles and industrial production facilities.

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Climate Change

- Supporting Arab countries in conducting an environmental and economic impact assessment of climate change and in implementing needed adaptation measures as well as in establishing institutional capacities in the field;
- Supporting regional collaborations on climate-change control and mitigation strategies and encouraging linkages to international efforts in this regard;
- Mitigating the impact of policies and measures adopted by industrialized countries to comply with the United Nations Framework Convention on Climate Change and the Kyoto Protocol to the Convention and compensating Arab nations for losses incurred as a consequence of these measures.

Industrial Development

- Encouraging private sector development in sustainable industries and extending financial and technical support to SMEs;
- Introducing strategic policy interventions to improve processes and products through adopting new approaches to life-cycle assessment, industrial environmental management, sustainable consumption, cleaner production, ecolabelling and the instituting of innovative financing mechanisms to encourage private sector involvement;
- Integrating sustainable industrial approaches with similar efforts in the services, infrastructure and resource management sectors and establishing national clearing houses for waste exchange;
- Instituting a regional information network to act as a mechanism to deliver information on legislation, emissions standards, cleaner technologies, waste minimization and industrial environmental management.