ECONOMIC ASPECTS OF SUSTAINABLE DEVELOPMENT IN LEBANON
INTERNATIONAL COOPERATION

Decision-Making: Coordinating Bodies

The Ministry of Foreign Affairs is in charge of preparing, coordinating and implementing the external policy affairs of the government of Lebanon (law no. 1306).

The Ministry of Environment is in charge of protecting the environment in general, setting regulations and standards, and advising on the wise use of implementing projects and programme in a sustainable manner.

The Council for Development and Reconstruction is responsible for coordination and management of foreign assistance. The Council is the national government agency responsible for planning, mobilizing and coordinating external financing, and implementing large-scale and complex projects. CDR is also responsible for selecting companies, local and international, that have submitted bids for development projects and for supervising the work carried out on each project.

The Council of Ministers is the body authorized to approve all development projects at the national level. The execution is carried out through the ministries in charge, governorates and/or municipalities. However, since the Council for Development and Reconstruction (CDR) replaced the Ministry of Planning (Decision no. 5 in year 1977), it became the national executing agency for all national development projects (especially internationally funded ones). Some of its duties are:

- To plan and suggest economic, financial and social policies.
- To propose to the Council of Ministers laws for reconstruction and development;
- To advise the Council of Ministers on models of execution, finance and control of the government approved programmes and projects;
- To ask various ministries, municipalities and other public institutions to prepare projects that suit public reconstruction and development goals;
- To provide the ministries, municipalities as well as public and private institutions with relevant required data.

On the other hand, the Code of the Environment pointed out to the establishment of a National Council for the Environment (Art. 10) that would encompass representatives of various ministries, NGOs, scientists and others. The main duties of the Council will be to review the main amendments pertaining to environmental financial policies and environmental priorities, to assess environmental repercussions upon implementation of a given activity, to coordinate orientations of institutions and ministries, and finally to review and adopt all amendments made to laws, regulations and standards relative to the protection of the environment. This Code is still under review at the Parliament.

Decision-making is made through CDR, the Ministry in charge an/or the Mohafazats (Governorats). However, it is worth mentioning that municipalities are increasingly taking the initiatives of establishing twinning programmes, mainly with European cities.

Decision-Making: Legislation and Regulations

No laws, regulation or directives pertaining to sustainable development in general, and to Agenda 21 in specific, have been identified.
Decision-Making: Strategies, Policies and Plans

In 1999, the Lebanese Government requested from CDR to prepare a five-year development programme, which will accompany the five year economic plan. This programme will replace the Horizon 2000 plan. The prepared Plan identified policy measures to be adopted by both the government and the private sector in order to promote an open and multilateral trading system. These measures are:

- Bring Factor costs in line with neighboring countries;
- Promote the upgrade of management and industry expertise;
- Improve access to specialized skills and resources;
- Improve access to capital.
- Enhance firm knowledge, competencies and strategy;
- Enhance local competition.
- Improve access to markets.
- Increase sophistication of products and services.
- Continuous upgrading of products and services;
- Increased coordination of activities among interconnected companies and institutions in a particular field.

The approval by Parliament of the law on privatization on 9 May 2000 represented an important step in the process of privatization. The law organizes the procedure of privatization with the fundamental aims of increasing budget revenues, reducing the cost of public services and improving the efficiency of their delivery, and reforming the administration. The Law stipulates that Parliament must authorize privatization on a case-by-case basis. The main possibilities for privatization are in the telecommunications, electricity, water, and transport sectors. The privatization programme will be implemented in accordance with the fiscal adjustment plan.

The Government addressed these macro-economic issues through the elaboration of a Five Year Fiscal Plan aiming at increasing macro-economic strength and stability, and the Five Year Development Plan aiming at strengthening and building the engines of growth at the micro-economic level and at the same time improve the living conditions throughout Lebanon. The FYDP objectives are to:

1- Formulate an action plan to upgrade the competitive environment for Lebanese firms and define a vision for the future development of the Lebanese economy.
2- Prioritize public expenditure projects to achieve acceptable provision of public facilities and social services within targeted public spending levels; and
3- Build a stronger competitive platform for Lebanon’s firms and people to compete in the world economy.

Decision-Making: Major Groups Involvement

NGOs, local authorities, industries and scientists are mostly involved in such a decision-making process, either on a consultative or a playing-role level. For instance, NGOs manage the three protected areas included within the GEF-Protected Areas Programme, the National Council for Scientific Research is responsible for conducting scientific studies for the Protected Areas Project and the Agrobiodiversity project. The same concept is applied to universities or independent researches and academicians. The remaining groups (e.g. women, farmers, workers, municipalities, etc.) are rather considered as target groups and direct beneficiaries of any implemented activity or project.

The above-mentioned groups benefit from financial assistance to carry out sustainable development issues (research, conservation, awareness campaigns, etc.). For instance, the management of the three protected areas included in the Project on Protected Areas (GEF) is being implemented by non-governmental organizations, thereby gaining in terms of area conservation, job creation and technical expertise. Support is given to NCSR to conduct scientific studies (Protected Areas Project, Agrobiodiversity, etc.).
Also, the European Commission approved a grant of 25 million Euro under MEDA 1 to create a Social and Economic Development Fund, which main objective is to provide funds to priority and underprivileged groups. It will also support the job creation capacity of small and medium enterprises through credit lines as well as through projects supporting job creation at local level and reduce the exclusion factors for priority groups, through local authorities and NGOs.

In addition, programmes for decentralized cooperation are undertaken, targeting towns (Med Urbs), universities (Med Campus) and professional media (Med Media). Added to that, a support programme is financed by EC to joint NGO development activities. Until now, more than 30 joint European and Lebanese NGO projects were financed under different budget lines.

Finally, two major projects will be initiated in 2001 targeting NGOs. The first one is the Institutional Support for NGO issues amounting for 1.000.000 US$ and funded by the Italian Government (2 years duration) and the GEF Small Grant Facility at UNDP headquarters.

As mentioned earlier, the Five Year Development Plan (FYDP) has among its objectives to promote the competitive advantage and competitiveness of the private sector which plays a central role as a motor for production within the Lebanese economy. In this respect, the Three-Point Programme was proposed.

In addition, as the government recognizes the potential for accelerated privatization both to increase government revenues to pay public debt and to increase productivity of public services, a Privatization Unit is proposed by FYDP to be implemented in order to handle privatization related-issues.

Studies relative to this issue are not complete, but it could be considered that Small and Medium Enterprises will be mostly affected.

**Programmes and Projects**

The main donor organizations of the UN system were UNHCR, UNICEF, IFAD, UNDP and UNODCCP in 1999 with an amount ranging between 1 and 2 million US$. 12% of these disbursements were allocated to natural resources and were mainly contributed by the Montreal Protocol and the Global Environment Fund (GEF) with small-scale contributions from UNDP, FAO and IAEA.

The Montreal Protocol disbursed through UNDP and UNIDO 0.6 million US$ for the creation of an ozone unit at the Ministry of Environment to effectively phase out ozone depleting substances, and for phasing out of chlorofluorocarbons at a number of Lebanese industries. GEF disbursed 0.4 million US$ for strengthening national capacity and grassroots in-situ conservation of three protected areas (Horsh Ehden, Barouk Cedars and Palm Islands).

10% were allocated to agriculture, forestry and fisheries (IFAD, FAO, IAEA and GEF). The near totality of disbursements was made by IFAD for two on-going investment projects. The irrigation rehabilitation and modernization project (0.8 million US$) aims at improving the income of small farmers in underserved areas where irrigation schemes need rehabilitation. The small-holder livestock rehabilitation project (0.2 million US$) aims at increasing the income level and welfare of 2.900 farm families in the Bekaa Valley through importing cows, providing adequate farm support services and providing training for farmers. Project implementation continues to be disappointedly slow.

Other projects are:

The Capacity 21 programme phased out in December 1999. A major achievement of this project was the development and assistance to four municipalities in formulating an environmental action plan through Local Agenda 21 (LA21). The work plan made to the selected municipalities includes the establishment of environmental action plans defining specific actions, policies and economic measures for sustainable development according to the priorities set by the municipality itself.
The Investment Planning and Programming (IPP): Funded by the European Commission, this programme aims at supporting the implementation of public infrastructure investments in Lebanon. With a budget of 3 million dollars, it is planned to address energy issues including energy supply and demand, renewable energy and transport sector. The EU funds will be allocated to support institutional and policy nature activities as well as prime investment scale projects in energy efficiency. This will be achieved by supporting project design and providing technical advice to concerned private and public stakeholders.

The Project on energy efficient buildings: Funded by the consortium Fonds Français pour l’Environnement (FFEM)- Agence de l’Environnement et de la Maîtrise de l’Énergie (ADEME) and the Association Libanaise pour la Maîtrise de l’Énergie (ALME), and implemented by the Urban Planning Department and the Ministry of Energy and Hydraulic Resources, this two-year project aims at developing and adopting energy codes and thermal guidelines for buildings to enhance energy efficiency and end-use performance.

The Project on “Lebanon-cross sectoral energy efficiency and removal of barriers to ESCO operation”: This project, financed by UNDP and implemented at the Ministry of Energy and Hydraulic Resources, aims at assisting Lebanon curbing GHG emissions resulting from inefficient end-use energy consumption in all sectors of the economy. This will be achieved through removal of barriers to the wide scale introduction of energy efficiency and energy conservation measures in all sectors of Lebanese society. For that purpose, a Lebanese Center for Energy Conservation and Planning will be established. This Center will provide energy efficiency services to the public and private sector industries.

The Lebanese Environment and Development Observatory (LEDO) is a project funded by the European Commission – LIFE Third Countries, managed by the United Nations Development Programme (UNDP), and hosted by the Ministry of Environment. Launched in December 1999, its general objective was to provide proper information and better understanding of the state of environment and development in Lebanon. This objective will be achieved through (1) partnerships with other ministries, agencies, academic and research institutions, as well as governmental and non-governmental organizations involved in environment and development issues, (2) pooling efforts to gather environment and development data, and (3) identify gaps and redundancies to establish a national information network. LEDO entails a capacity building programme of partner organizations with a technical assistance component. A major and pilot achievement of this project is the formulation of indicators to assist institutions and decision-makers in monitoring and planning sustainable development issues.

The Fayhaa Municipal Union Observatory was initiated a tool to help the municipal union (within the City of Tripoli, North Lebanon) in the management of environment issues. Its main objectives are to (1) present a better understanding of the current state of environment and development in the area, (2) identify gaps and provide information to fill these gaps, (3) avoid overlapping in information collection, disseminating and sharing gathered information and making it available to local authorities as well as (4) building a solid base to encourage partnership and collaboration among municipalities in the area and other organisations of the civil society. The Fayhaa Municipal Union Observatory launched the air-monitoring laboratory in April 2000, which is equipped to measure air emissions from mobile sources and industrial activities.

The Methyl Bromide Alternative Demonstration Project was an outcome of the Ozone Office. The project aims at demonstrating the efficacy of various chemical and non-chemical methods as technical and economical alternatives to methyl bromide. The non-chemical methods include the soil solarization, biofumigation, and use of resistant varieties where available. A national strategy to implement methyl bromide will be formulated at a last phase of the project implementation upon obtaining of all results of the demonstration sites.

The project for “Strengthening the Permitting and Auditing System for Industries” (SPASI) aims at strengthening the permitting, monitoring and auditing system for industries through the development of necessary legislation and the introduction of adequate tools. The project that started early 2000 is funded by EU-LIFE Third Countries, managed by UNDP and executed by the Ministry of Environment. Among the objectives set for this project, (1) set/update decrees for classified establishments; (2) set/update standards for environmental quality; (3) set environmental auditing procedures; (4) spread awareness concerning industrial compliance; and, (5) develop a compliance action plan.
The Conservation and Sustainable Use of Dryland Agrobiodiversity is a regional project aiming at promoting the conservation and preservation of important wild relatives and landraces of agricultural species in Lebanon by introducing and testing in-situ and on-farm mechanisms and techniques for the conservation and sustainable use of agrobiodiversity. The specific objectives of the project includes (1) conducting eco-geographic surveys of crop target species, (2) creating a standardized database on collected information from the national and regional project components for a better understanding of the threats of the agrobiodiversity of the region; (3) promoting alternative land-use practices at project sites for the conservation and suitable use of agrobiodiversity; (4) increasing national capacity to provide training in-situ, and (5) raising awareness.

GEF, the Interim funding mechanism to the Climate Change Convention, along with UNDP, funded the Climate Change enabling activity in Lebanon (1998-1999) to build national capacity in order to fulfill its convention requirements. Three Main activities were undertaken under this project:

- A first National inventory of greenhouse gases for baseline year 1994 was developed;
- A national greenhouse gas mitigation strategy was prepared that comprises options to reduce greenhouse gas emissions from main sources such as the energy sector, waste sector, industrial sector and the forestry as a potential sink of CO2.
- Lebanon’s vulnerability was assessed to climate change. This analysis comprised the terrestrial ecosystem (forestry, protected areas and agricultural crops), the marine ecosystem, coastal zones and water resources.
- Poverty Eradication;

At the end of 1999, there were five programmes providing poverty loans with 4,400 active borrowers and a loan portfolio outstanding of US$ 2 million. The average outstanding loan balance was US$454 (95% female borrowers and 39% of borrowers in rural areas). There were 13 programmes providing very small business loans with 6300 active borrowers and a loan portfolio outstanding of US$ 8.6 million. The average outstanding loan balance was US$ 1358 (16% female borrowers and 68% living in rural areas).

A “National Programme for improving living conditions of the poor in Lebanon” was executed with aims to reinforce on-going national efforts to understand the characteristics of the poor in Lebanon, strengthen the Ministry of Social Affairs to develop a national framework for poverty reduction and implementing its programmes in this context, and to mobilize the needed financial resources for its implementation. The project is a continuance of efforts, initiatives and outcomes of a Poverty Strategy Initiative (PSI) executed by the Ministry of Social Affairs (1997-1998), and supported by UNDP (150,000 US$). The outcome of these efforts produced the “Mapping of living conditions in Lebanon” which identified regional disparities and priority needs and gaps for a national and comprehensive approach for reducing poverty. The study examined the characteristics of the deprived in Lebanon with respect to location, demography, education, housing services, car ownership and occupation of head of household and relation to the labor force.

**Status**

Since 1990, Lebanon has undertaken important achievements and initiatives to reconstruct its economy and achieve a stable macroeconomic environment. The reconstruction period re-put in place the public infrastructure and basic social services. However, the reconstruction entailed major public debt combined with ineffective taxation system, creating serious fiscal challenges to the country. Furthermore, the policy of maintaining high interest rates allowed the currency to stabilize and inflation to be controlled, but at a cost of low investment in the private sector.

All above-mentioned projects were the result of bilateral donations. In fact more than half of external assistance disbursements was from bilateral sources (55%). It is to mention that the World Bank allocated 55.0 million US$ to solid waste and environment, while 2.4% of total EU funds are allocated to environment.
Investment project assistance amounted to US$122.9 million in 1999. This mainly benefited the health sector (19%), human resources development (18%), social development (18%, the near totality for drinking water and sanitation), energy (17%) and transport (15%).

Total technical cooperation represented 31% of total disbursements of external assistance, unchanged from year 1999. Disbursements of invested-related technical cooperation remained modest at US$ 6 million, the near totality of which were grants. The main beneficiary sectors were human resources development (39%) and area development (30%).

Disbursements of freestanding technical cooperation increased by mere 1.5% to US$ 52 million in 1999. The near totality was in form of grants. Freestanding technical cooperation was concentrated in human resources development (34%), development administration (14%), social development (17%) and health (10%).

The main sources of technical cooperation in 1999 were France (US$ 9.2 million), the UN System (US$ 8.8 million), the European Union (US$ 6.4 million), and the United States of America (US$ 5.9 million).

Emergency and relief assistance decreased to US$ 6.5 million in 1999 or 3.4% of total (compared to 4.2% in 1998). 82% was humanitarian aid and 18% assistance for health, all implemented by non-governmental organizations.

Total aid flows in terms of disbursements stood at only 188 million US$ in 1999, corresponding to 1% less than that of 1998 and 11% less than that of 1997). Total aid flows as a percentage of public investment amounted to 18.3 in 1999, slightly down from 18.7 in 1998, but significantly better than 16.4 in 1997. The share of aid flows in foreign financed public investment was 62% in 1999.

The following table summarizes the changes relative to flow of external assistance (in million US$).

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<tbody>
<tr>
<td>Gross Disbursements</td>
<td>214.4</td>
<td>317.9</td>
<td>210.1</td>
<td>190.1</td>
<td>188.0</td>
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<tr>
<td>Grants</td>
<td>113.4</td>
<td>132.3</td>
<td>99.8</td>
<td>103.3</td>
<td>90.5</td>
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<td>Soft loans</td>
<td>101.0</td>
<td>185.6</td>
<td>110.4</td>
<td>86.8</td>
<td>97.5</td>
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<td>Gross Reimbursements</td>
<td>20.2</td>
<td>13.7</td>
<td>27.6</td>
<td>31.8</td>
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<tr>
<td>Net disbursements</td>
<td>80.9</td>
<td>172.5</td>
<td>83.6</td>
<td>54.5</td>
<td></td>
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<tr>
<td>Official Development Assistance (net)</td>
<td>179.4</td>
<td>292.5</td>
<td>176.7</td>
<td>144.9</td>
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Source: Development Cooperation Report-Lebanon 2000-UNDP

The disbursement of technical assistance by type of assistance is presented in the following table (in million US$):

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<tbody>
<tr>
<td>Freestanding technical cooperation</td>
<td>32.0</td>
<td>22.4</td>
<td>22.7</td>
<td>27.7</td>
<td>28.0</td>
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<tr>
<td>Investment-related technical cooperation</td>
<td>1.3</td>
<td>0.7</td>
<td>4.0</td>
<td>4.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Investment project assistance</td>
<td>59.5</td>
<td>67.1</td>
<td>68.0</td>
<td>64.0</td>
<td>65.4</td>
</tr>
<tr>
<td>Food aid</td>
<td>2.9</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Emergency and relief assistance</td>
<td>4.3</td>
<td>9.3</td>
<td>5.3</td>
<td>4.2</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>214.4</td>
<td>317.9</td>
<td>210.1</td>
<td>190.1</td>
<td>188.0</td>
</tr>
</tbody>
</table>

Source: Development Cooperation Report-Lebanon 2000-UNDP
**Challenges**

Major challenges in building partnerships with other countries for promoting sustainable development include:

- Management and industry knowledge (upgrading information and labor quality);
- Setting clear private and public strategies;
- Access to capital;
- Innovation and access to technology;
- Market studies on customer’s preferences;
- Increase of cooperation between concerned institutions.

The issues of Agenda 21 that require the most immediate attention for bilateral or multilateral cooperation, in view of Lebanon, are:

- Combating poverty;
- Changing consumption patterns;
- Intensive capacity building and awareness raising targeting all groups;
- Integrating and enforcing environment and development into the decision making process;
- Strengthening partnerships with civil societies, namely local authorities and NGOs.

Major challenges in building multi-stakeholder partnerships consist of:

- Promoting a clear understanding of sustainable development issues;
- Setting clear goals and objectives;
- Mobilization of resources (human and financial);
- Upgrade technical and scientific knowledge;
- Increase of cooperation among local institutions (between NGOs, or between NGOs and private sector, etc.).

With over 50% of Lebanon exports dependent on natural resources, the challenge will be to move to higher value creation and to grow industries which are less dependent on natural resources.

On the other hand, the FYDP (2000-2004) indicated the following steps as alternatives to the administrative procedures considered as being barriers hindering the effectiveness of trade:

1- Obtaining documentation and delays due to processing documentation:

   - Cancel current L.L. 50.000 export fee on condition that forwarding agent reduce its fees by 50% to $75 ;
   - Cancel the requirement for importers to obtain legalization from the Lebanese Embassy in the country of origin, the total annual revenues of which are currently used to support embassies;
   - Cancel the requirement that importers submit the original version of required documents to begin custom clearance.

2- Administrative barriers for foreign investors:

   - Expedite establishment of the “One-Stop-Shop” sponsored by the Investment and Development Authority of Lebanon (IDAL);
   - Set up electronic systems for customs clearing at border posts, not only at ports;
   - Simplify procedures for obtaining the right to temporary import raw materials;
   - Limit the number of times exporters are required to file the documents to prove that they are re-exporting raw materials under the law on temporary import;
   - Set up a One-Stop-Shop at the Port with representatives of all relevant Economy and Commerce, Ministry of Agriculture and Ministry of Environment);
   - Allow trucks carrying export cargo to have access to the Port for longer time;
   - Rationalize visa restrictions hampering Arab and Eastern European tourist visitors who wish to vacation in Lebanon);
   - Simplify procedure for hotels to report daily their guest registration.
Capacity-building, Education, Training and Awareness-raising
Capacity building is needed in project administration, management, monitoring and follow-up after projects are phased out.

Also, technical (sectoral) capacity building is needed for a sound implementation of the project goals and objectives.

- Assistance to the rehabilitation of the Lebanese Administration (ARAL). This aims at implementing the National Administrative Rehabilitation Programme (NARP) both at the central and local levels, with particular emphasis on central government agencies, ministries, public entities, and local government and Services. The Programme started its operations in the last quarter of 1999 (EU funding).
- The Industrial and Commercial Standards Project (6 million Euro) aims at strengthening the institutions responsible for the preparation and certification of standards and norms, with the Lebanese Standard Institute-LIBNOR. (EU funding).
- The objective of the Project for “the Implementation of the Institutional Development Strategy for Lebanon” is to develop a new substantive relationship with the public and enhance the role of the government as the instrument of national integration through the following elements of good governance: (1) a competent, more productive and performing civil service; (2) prudent, responsible, responsive, transparent and accountable civil service, and (3) working in harmony with and increased participation of the private sector and the third sector. These elements will be achieved through the (1) implementation of the institutional development strategy, (2) procurement and execution of office technology, information technology, technical assistance and training; and, (3) development of a resource mobilization strategy to assist the Office of the Minister of State for Administrative Reform (OMSAR) in its public sector management reform efforts. This UNDP project is co-implemented by UNESCO and Canadian International Development Agency (CIDA), and executed by OMSAR.
- The “Fiscal Reform and Administration” Project is intended to help rehabilitate the Ministry of Finance (MOF) to perform its fiscal policy role and to effectively collect, manage, administer and account for the public finances of the country. It aims at reactivating and modernizing the tax and customs administrations, and the budget and treasury systems. At the same time, the cadastre and land registration system will be rehabilitated under the World Bank loan through sub-contracting arrangements outside the immediate purview of the project. The UNDP project is implemented jointly by UNCTAD, IMF and UNOPS, and executed by the Ministry of Finance.
- Technical Assistance to the Lebanese Administration was provided since 1993 to various ministries and central offices. The main achievements were: (1) a new and reinforced information and accounts system at the Central Bank, and (2) a redesign of the customer services provided by the Ministry of Economy and Trade, a proposal to reform the norms regulating insurance, silos and consumer protection, and the provision of new information networks at the ministry level (EU funding).
- The project for the Structural Adjustment Facility is designed to reinforce fiscal reform. Amounting to 50 million Euro, the project will provide the Lebanese Government with direct budget assistance, facilitate and accelerate an in-depth reform of public finances and contribute to the sustainability of the Government’s economic plan, while securing the adoption of important fiscal measures, speeding up privatization and using revenues to reduce the debt stock (EU funding).
- A Project for the Industrial modernization was approved in Brussels (grant of 11 Euro) in September 1999. The project aims at supporting the development of private sector manufacturing in Lebanon, with particular emphasis on established small and medium size enterprises in the food processing, printing and packaging industries. The measures proposed focus on helping enterprises with growth capacity to address specific barriers to development and to export effectively, to modernize the legal aspect and access to financing, to support professional training and develop the Lebanese enterprises and joint ventures (EU funding).
- Euro-Mediterranean Small and Medium Size Enterprises cooperation, which finances the organization of business-to-business meetings between Mediterranean and European companies. These enterprises meet in three different fora (1) Euro-Partenariat meetings, (2) Med-Partenariat and (3) Med Enterprise. Several Lebanese companies have already participated in these forums (EU funding).

Within the context of a regional initiative of UNESCO, the Center for Education Research and Development and UNESCO jointly developed a comprehensive interactive database on education. The reform and upgrading of basic education in all aspects is expected to gain from considerable international support in the next few years. The implementation of the curriculum reform continued for the third year, even though budget and capacity constraints inhibited full implementation of all components of the programme. The UNDP educational programme for health and environment prepared with support of WHO, UNESCO and other international organizations was made available to all schools by the Center for Education Research and Development in the last quarter of 1999.

The five-year development plan (2000 - 2004) carried out by CDR suggests a three-point programme to improve market accessibility of the productive sectors:

- Taking immediate action to remove administrative barriers currently hindering trade exchange and foreign investment;
- Adopting measures to upgrade the platform for competitiveness of productive sectors;
- Promoting strategy for competitiveness of groups of related firms through effective measures on each individual sector.

This programme’s implementation will assist in addressing the fundamental issue of productivity and competitive advantage to better enable Lebanese enterprises to compete in global markets.

Television and newspapers are considered as the most important tools used to promote a better understanding for a closer cooperation for sustainable development. Also, such dissemination is ensured by local partners to these international entities.

A major event is to mention in this respect. The UNDP- Lebanon Country Office organized a UNDP MEDIA Award for Sustainable Human Development, a contest open to all Lebanese Journalists. This contest was organized under the patronage of the Minister of Information and in cooperation with the Press Syndicate and the Journalists Association. The overall objective was to raise awareness and to promote SHD and to encourage media to become partners and allies for increased and positive reporting on development and allies for advocacy. The Media award was launched respectively in 1997 and 1999. This award was made possible by sponsorship of private sector.

Many projects previously described will tackle directly or indirectly the capacity building side for technical experts and professionals. In addition, the FYDP (2000 – 2004) highlighted the need to promote the upgrade of management and industry expertise through:

- The establishment of business incubators that offer business support services as well as a physical location for SME in their start-up phases; knowing that the Ministry of Industry is proposing a national project to create six incubators.
- The promotion of knowledge and skill transfer from Lebanese firms abroad.
- The upgrading of executive education and training.

Also, the FYDP report pointed out the fact that although Lebanon has currently numerous technical schools, curricula are outdated and limited practical training is provided to meet the needs of priority sectors. Therefore, it is crucial to create vocational and sectoral technical centers in line with the requirements of priority industries.

These steps will be empowered by establishing:
- Specialized telecom infrastructure (data network, additional leased lines);
- Database of foreign companies and individuals in Lebanese emigrant network.

Data on bilateral, regional and multilateral cooperation are available through annual reports published by national institutions responsible for the management of international funds and funding agencies. For instance, some of the latest reports are:

- Development Cooperation Report (Lebanon 2000), prepared by the Office of the United Nations Resident Coordinator, with support from the Council for Development and Reconstruction; Website: www.undp.org.lb
- The Central Bank annual and progressive reports as well as website: www.bdl.gov.lb

In addition, data could be obtained through ministries where funded projects are implemented, the Official Gazette and the participation in conferences and seminars.

Research and Technologies

As explained earlier, funds allocated for environment management and conservation are funded through UNDP, GEF, FFEM, UNIDO, etc. In addition, the Ministry of Environment allocates annually from the budget a small amount of seed money (12 to 20 million Lebanese pounds) to help implement projects proposed by NGOs and screened by a committee representing the Ministry, UNDP, private sector and Lebanese Environment and Development Observatory. These small projects tackle research and conservation issues.

Priorities in technology development are based upon:
- Establishment of a common database for sustainable development (through LEDO);
- Upgrading the industrial sector;
- Promoting and conserving remaining green cover;
- Fighting air and water pollution;
- Building the capacity of private and public sector in sustainable development issues.

The FYDP relative to year 2000-2004 proposes the enhancement of firm knowledge, competencies and strategy as well as enhancing local competition through:

- The Trade Information Center;
- The creation of a network of MET as first government-to-public e-commerce model in Lebanon. This will facilitate business access to up-to-date knowledge data bases;
- IDAL data bank development;
- Upgrade of ACS;
- The establishment of a permanent national industrial statistics system at the Ministry of Industry (Industrial Information and Documentation Center);
- Competitiveness Fund to support cluster strategy studies; and,
- Establishment of a Privatization unit to prepare and implement its privatization programme covering all potential candidates for privatization;
- Establishment of an Economic Policy Unit to promote competitiveness measures in trade and services, intellectual property protection and competition policy; and
- Technical assistance in drafting competition policy and law sponsored by MET and funded by the World Bank.

A continuous upgrade of technology and constant innovation is also proposed to be based upon:

- Funding a master plan for a national strategy for the development of information to advance the high-value-added information technology sector;
- Establishment of E-commerce promotion unit at Ministry of Economy and Trade;
Rehabilitation of laboratories of the Industrial Research Institute to ensure testing of locally produced and imported goods;

Innovation competition through 50,000 US$ prizes awarded by the Ministry of Economy and Trade for top business plan proposal for a competitive business, solicited from young Lebanese entrepreneurs and students.

**Financing**

At the end of 1999, the Government reactivated the Investment Development Authority of Lebanon (IDAL). In the first semester of 2000, IDAL cleared the way for foreign investment worth about US$ 500 million (3000 job opportunities) by eliminating red tape through the implementation of the “one-stop shop” service, applications for permitting investment projects, submitted by foreign investors are received and facilitated until the final permit is issued.

Also, article 25 of Law 173/2000 relative to national budget 2000, tackles the incentives to develop the financial market. These incentives stated that the relative distributions of the Lebanese financial companies are decreased from 10% to 5% in the following cases (after issuing this law):

- When any Lebanese Corporation contribute by its bonds in the Bourse of Beirut, starting from the year coming after the year of the bonds’ registration.
- When any Lebanese Corporation allocates a percentage not less than 20% of its capital to Arabic companies whose bonds are operating in their respective bourse’ countries, or to foreign countries whose bonds are operating in the Bourse of OECD countries.
- When any Lebanese Corporation issued GDR corresponding to 20% at least of its total bonds available at Bourse of Beirut.

The Lebanese Government signed (and still) several agreements aiming at increasing the investment of local companies and businesses in other countries. In this respect, the 1977 Economic and Financial Cooperation Agreement made with EU regulate trade relationship between EU and Lebanon. As a result of this agreement, about 85% of all Lebanese exports to EU benefit from preferential treatment. In return, Lebanon is not required to give preferential treatment to EU products.

Since 1992, Lebanon has entered into, or initialed, a number of treaties for the promotion and protection of investments and the avoidance of double taxation. The Agreement for the Promotion and Reciprocal Protection of Investment aims at promoting private investments between two contracting countries in each other’s territory. Treaties for the promotion and protection of investments have been signed with each of Armenia, Azerbaijan, Canada, China, Cuba, Czech Republic, Egypt, Finland, France, Germany, Greece, Iran, Italy, Malaysia, Morocco, Romania, Russia, Spain, Syria, Tunisia, Ukraine and the United Arab Emirates. Similar treaties have been initialed with each of Belgium, Bulgaria, Kuwait, Poland, Sweden, Switzerland and the United Kingdom. The Agreement for Avoidance of Double Taxation and the Prevention of fiscal evasion grants solutions to individual and legal entities that suffer tax treatment on an item in the same time period. Treaties for the avoidance of double taxation have been entered into with four countries, signed with six others and initialed with additional fourteen countries.

Lebanon Invest Global Loan Risk Capital: The European Investment Bank made funds available to Lebanon Invest, to take equity participation and help finance small and medium size industrial projects. Investments are made in new projects and in the rehabilitation and extension of existing projects. Funding is provided in the form of equity, and semi-equity, and is used to start, expand or improve a company (EU funding).

Official Development Assistance amounted to 175 million US$ in 1999 equivalent to 41.7 US$ per capita. This is below average for a country recovering from an extended complex emergency period. ODA net is estimated at roughly the same level as last year (about 140 million US$). ODA per capita represented roughly 1% of GNP, which is below the average of other countries at a similar level of development. The distribution external assistance focused on social development, health care, energy, human resources,
transport, humanitarian and development administration, and area development implemented through programmes and projects targeting the totality of the Lebanese territory.

Continuous efforts are being deployed by the Government to increase these benefits that were affected during the last period by domestic and donor constraints.

**Cooperation**

Regional integration and cooperation in sustainable development including environmental protection;

Cooperation is made through regional programmes implemented by international funding agencies (e.g. GEF, UNDP), donor agencies and countries, as well as through bilateral agreements (Syria). These programmes will be presented in details in other sections of the questionnaire.

Multilateral cooperation and agreements related to sustainable development;

Lebanon established bilateral and multilateral agreements with many countries (refer to questions no. 6 and 33).

UNDP undertook in 1999-2000 a project to strengthen the capacity for monitoring and reporting on the environment, implemented by UNESCWA (80,000 US$).

The Lebanese Government and UNDP/UNSO (80,000 US$) and the German Government (480,000 US$ through GTZ) started a three-year national action programme aiming at taking stock of the current situation of desertification, to be followed by the formulation of a strategy for the management of drylands.

A UNIDO field mission is preparing a three-year programme (94.5 million US$) with a focus on effective governance, partnerships and market access, improving enterprise performance, and promotion of cleaner production. Resources for programme implementation are to be mobilized.

In mid-2000, GEF approved a project for the promotion of energy conservation, amounting to 3.5 million US$. Early in 2000, GEF had approved the inclusion of Lebanon in the list of countries to benefit from small-scale grants for NGOs and local associations.

The World Bank is currently preparing to replace the Coastal Zone Management Project that was cancelled.

Lebanon is a Contracting Party to:

- Mediterranean Action Plan (MAP), 1975
- Barcelona Convention plus five protocols signed and ratified the following Protocols:
  - Pollution from shops and aircraft or incineration at Sea;
  - Oil and further harmful substances
  - Land-based sources of contamination;
  - Specially protected areas and biological diversity.
- Paris Convention concerning the Protection of the World Cultural and Natural Heritage, 1972.
- United Nations Framework Convention on Climate Change: Signed in 1995
- The MARPOL 73/78 Convention, Annex 1: Signed and Annexes ratified.
- The Bonn Convention on the Conservation of Migratory Species of Wild Animals. Not ratified yet
- Kyoto Protocol: Not signed.

The bilateral cooperation between Lebanon and Syria witnessed a far-reaching agreement on environmental issues (signed in February 2000). The agreement covers joint actions to address environmental issues affecting agriculture, water safety, coastal area management and marine ecology. It is observed that whereas collaborative and joint action in tourism development warrants to be accelerated, the approach of liberalization of trade agricultural trade appears hasty, particularly in the absence of a programme to accompany the required transformation and upgrading of the sector.

A Lebanese –UAE free trade agreement was signed on 15 April 2000; it could set the stage for a three way trade zone (Lebanon, Syria and UAE). Lebanon has similar free trade agreements with Egypt, Kuwait, Saudi Arabia and Bahrain.

Lebanon will adhere to the electricity network of the Near East. Lebanon will join Turkey, Iraq, Egypt, Syria and Jordan in a power-grid connection project, which will help Arab countries provide cheaper and more electricity to consumers.

Joint activities are being made through (1) conferences, seminars or workshops, (2) participation in an internationally funded project as expert, (3) NGO membership, (4) directories of professionals at international agencies.
TRADE

Decision-Making: Strategies, Policies and Plans
The Five-Year Development Plan (2000 - 2004) carried out by CDR pointed out to the necessity to launch in the short term several initiatives in order to produce world-class products and services:

- Establishment of an Export Promotion Board to formulate exports promotion strategies and monitor international markets for new opportunities.
- Establishment of a WTO unit at the Ministry of Economy and Trade to study the impact of liberalization on the economy, develop regulatory and legislative changes and work on Lebanon’s accession to WTO;
- Enhance capacity to negotiate effective trade agreements with the Arab markets as well as with EU;
- Marketing Strategy and Materials (IDAL);
- Data base of Lebanese owned firms located abroad.

Programmes and Projects
A three-point programme was suggested to strengthen the competitiveness of the productive sectors, in the short term:

- Immediate action to remove barriers to trade and foreign investment;
- Mobilization of domestic and external financial resources for development cooperation;
- Transfer of environmentally sound technology and know-how.

Status
Lebanon has applied for membership in the World Trade Organization (WTO) and was granted as observer status in April 1999

The Lebanese Government is also negotiating a partnership agreement with the European Union as part of the Euro-Mediterranean partnership framework. The proposed partnership covers several areas of cooperation, including the progressive liberalization of trade in goods and services through a gradual phasing out of tariff and non-tariff barriers, the liberalization of the right of establishment and trade in services, and various aspects dealing with financial support and grants. Implementation of the partnership agreement would require various structural changes in Lebanon, targeting industrial, agricultural and tax policies

Also, Lebanon is party to the Arab Free Trade Agreement and, tariffs on certain goods are being reduced by 10% annually among 14 Arab countries.

Free trade agreements were entered into force with Syria, Egypt, Kuwait and the United Arab Emirates. In addition, in February 1988, an agreement was entered into force between Lebanon and Syria, pursuant to which tariffs on industrial goods are being reduced by 25% per year, since 1999. A similar agreement for the reduction of tariffs on agricultural goods was entered into in September 1999 pursuant to which tariffs have been reduced by 50% effective November 1999, with an annual reduction of 10% over a period of five years.

Finally, the Ministry of Environment is the co-task manager on free trade and environment in the Mediterranean, a theme discussed in the context of the Mediterranean Commission on Sustainable Development (MCSD)- MAP. In this respect, a regional conference was organized in Beirut- September 1998 with the aim to discuss the current situation relative to Free Trade and Environment in the Mediterranean. Also, the Capacity 21 Programme, a UNDP project executed at the Ministry of Environment carried out a first initiative by carrying out a study on the impact of free trade of agriculture (pesticide use) and textiles on environment in Lebanon.
CHANGING CONSUMPTION PATTERNS

**Decision-Making: Coordinating Bodies**
The concept of sustainable production and consumption is not applied yet in Lebanon. However, both the Ministry of Trade and the Ministry of Industry are responsible for production and consumption issues in general; the Service for the Protection of Consumers deals with consumption patterns.

The Directorate of Industry within the Ministry of Industry has responsibility over industrial activity in Lebanon. The Ministry is responsible for registering and licensing industrial establishments. The Ministry of Environment has the duty to monitor and audit industrial pollution from one hand, and launch awareness campaigns on the other hand. The Lebanese Institute for Normalisation (LIBNOR) set production norms and standards. Even though promoting sustainable consumption and production is limited to governmental decision-making level, this role is not properly applied, since it is not within the priorities listed on the short term. Municipalities are not involved whatsoever.

The Ministry of Finance administers tax incentives; however these taxes are not applied on unsustainable production and consumption patterns.

**Decision-Making: Legislation and Regulations**
No specific legislation in this area has yet been formulated. However, the Ozone Office is preparing a law that will inhibit import and export of CFC products (expected to be ready by July 1999).

**Decision-Making: Strategies, Policies and Plans**
A National Strategy or Policy on Sustainable Consumption and Production has not yet been formulated.

A policy to promote the use of new and renewable sources of energy will be formulated within the Investment and Planning Programme, funded by the European Union (supposed to start end of 1999 at the Ministry of Hydraulic and Electrical Resources). A policy to promote the use of environmentally-sound technologies for sustainable production is under formulation within the Ozone Office Programme (1999).

Lebanon's Capacity 21 Programme developed a "good housekeeping guide," an environmental management guideline for small and medium-sized enterprises. The objective of this guide is enable these enterprises to identify simple and practical measures that can be undertaken to reduce the costs of production, enhance the company’s overall productivity, and mitigate environmental impact. These measures deal with preventing of loss of raw materials, minimising waste, conserving water, saving energy, and so on. This guide is voluntary for adoption by industries.

**Decision-Making: Major Groups Involvement**
Major Groups is involved in decision-making in this area in the following ways:

The private sector was actively involved in sustainable production by promoting recycling sector (paper and paper products, glass, metal); however these initiatives are subject to decline due to the lack of economic incentives and the high competition of local products with imported ones.

Non-governmental organizations participated in promoting paper and metal recycling; for some of them, this initiative was limited to awareness campaigns. For others, a complete waste source-collecting programme was conducted in some areas in Lebanon (Becharré, Arab Salim, etc.). It is worth to note that women are playing a leader role in Arab Salim in waste separation and sustainable consumption.

Regarding scientific bodies, several conferences and training courses were given at the Faculty of Agriculture, Lebanese University, in 1995. These meetings focused on the norms and standards of food processing in Lebanon as well as the guidelines for promoting good consumption patterns.

Environment committees are established within business and private sector in order to enhance the environmental requirements of the industrial sector.

Farmers were sometimes addressed to promote reusing of organic waste as fertilizers.

Programmes and Projects
**Status**

No accurate data are available regarding the efficiency in the usage of energy, water, etc. in both industries and households. However, regarding water, the national average net per capita daily water supply could be as high as 167 liters in presence of current water resources. But it was found that the average net consumption rate per person was about 64 liters per day, indicating substantial losses in the system.

Energy consumption is estimated to be 0.94 toe (tonne of oil equivalent) per capita. Measuring the efficiency of energy consumption is still hard for the moment. This problem is expected to be resolved with the launching of Investment and Planning Programme to be executed at Ministry of Hydraulic and Electrical Resources.

Domestic waste is estimated to be 0.8 kg/capita/day.

Under the execution of the national programme for the ozone layer protection, adopted by the Ministry of Environment in co-operation with UNDP, the Ozone Office was established to pursue the phasing out of ozone depleting substances. Industries (mainly aerosols, foams and refrigerator sectors) were approached to adopt technological substitutes using ozone friendly substances. The programme is expected to be completed by the end of 1999. Total cost funded amount to 4.073.727 US dollars.

Also, the Ministry of Environment conducted a study to minimize olive oil residues and waste. A focal point was appointed for this issue, which is done in the context of the Cleaner Production Programme that is conducted on the Mediterranean level. Resulting activities have not started yet.

Cement factories undertook a major rehabilitation plan to install cleaner technology with 50 million dollars loan from IMF.

Other projects underway include:
- Study on Cleaner Production of Tanneries in Lebanon (Ministry of Environment);
- The national plan for industrial waste management;
- A Programme about Strengthening the Permitting and auditing system for industries in Lebanon will be launched at the Ministry of Environment. This Programme which is expected to start mid 1999 will be executed within the framework of activities of Capacity 21 Programme.

Finally, it was noticed that no such programmes or pilot projects are developed by either the Chamber of Commerce nor the Ministry of Trade.

**Challenges**

Priority constraints include the following:
- Difficulty of law implementation and monitoring;
- Absence of green incentives;
- Carelessness of decision makers to promote sustainable production and consumption;
- Carelessness of media to transfer proper information regarding sustainable consumption;
- Lack of specialized and aware staff in the public and private sectors, as well as in non-government organizations.
- Capacity-building, Education, Training and Awareness-raising

UNIDO conducted several workshops on clean technology (1996), ISO 14000 (1997); other workshops about cleaner production were conducted specifically for decision-makers.

In general, the involvement of media is still very limited regarding environmental issues in general and consumption patterns in specific, probably due to lack of information. However, the Ministry of Environment conducted two workshops designed specifically to media where major environmental problems (mainly solid waste and water problems) were addressed and discussed. Also, many seminars, conferences, exhibitions and awareness campaigns about promoting reuse and recycling took place in a large number of schools and universities.
Information

Available information could be found at:

- The International Trade Centre, the Ministry of Economy;
- The Capacity 21 Programme, the Ministry of Environment;
- The Chamber of Commerce;
- UNIDO offices;
- Ministry of Environment.

Monitoring systems are not applied yet. However, the Ministry of Environment adopted a claim mechanism where industrial investigation is based on complaints and calls.

The Ministry of Environment also conducted a study that focused on auditing the tannery sector. The Unit of Planning and Programming, implemented at the Ministry of Environment, conducted an DSS System, an auditing programme applied on 30 industrial settlements all over the Lebanese territory. Finally, the Association Libanaise pour la Maîtrise de l’Energie (ALME), a national NGO, has performed a number of energy audits with the support of ADEME.

Generally speaking, the demand and marketing for such audit services remain limited due to the lack of consumer awareness and finance capability.

Information could be obtained partially at the International Trade Centre based at Ministry of Trade, through the SDNP website (http://www.sdnp.org.lb/) and the website of the Investment and Development Authority in Lebanon (http://www.idal.org.lb)/.

Research and Technologies

In the absence of proper legislation, the adoption of environmentally sound technologies in production is rather voluntary. Very few initiatives were conducted in this context, such as bottling redemption value programmes (Pepsi), installing cleaner technology plants (Cementerie Nationale), etc.

Cooperation

UNDP’s LIFE and Urban Management Programme sponsored solid waste recycling programmes in various forms.

The Capacity 21 Programme is acting through its local agendas on solid waste issues and getting rid of used cars (a priority within their action plan).
FINANCING

*Decision-Making: Strategies, Policies and Plans*

The Government's short-term and long-term plans address substantively the rehabilitation of the infrastructure that will have major positive consequences on sustainable development in general. The National Emergency Reconstruction Plan (92-95) and Horizon 2000 (95-2007) are the main national basis for domestic and external investment. Financing of these plans amounts to a gross total of $31 billion. Financing source requirements include $0.3 billion foreign capital grants, $11.2 billion foreign borrowing, $7.2 billion domestic borrowing and $12.3 billion current budget surplus. External financing was allocated to the following sectors:

- Electricity ($980 million);
- Water supply ($286 million);
- Education ($234 million);
- Water and solid waste treatment ($207 million).

The Government's medium to long term policy is to apply full cost recovery for environmental services and charges for environmental impacts. Increased fines on tree cutting have been introduced and implemented. Discussions are underway to reduce subsidies in the electricity sector. Restrictions of the import of plastic wastes have been introduced and implemented. Regulations for petroleum storage facilities have been implemented. Import of diesel vehicles (which was forbidden) has been authorized. The Council of Ministers in January 1995 also approved the installation of filters on all existing power stations in the country (estimated cost is $110 million).
TECHNOLOGY

Decision-Making: Strategies, Policies and Plans
There is no national policy on Environmentally Sound Technologies (ESTs). A cleaner production office at the Ministry of Environment is being established in order to identify alternatives for substitute technologies in all areas of Lebanese industry.

The International Trade Center at the Ministry of Economy and Trade and the Sustainable Development Networking Programme have both been funded by UNDP and received large national interest and interaction. The Programme on Fiscal Reform and Administration (UNDP/CIDA) and the National Administrative Rehabilitation Programme (NARP) have both been initiated. The NARP seeks to implement technologies in 32 ministries and in public administration. The Information Technology Group of the Technical Cooperation Unit has been institutionalized within the various Ministries. The Ministry of the Environment established a focal point to coordinate regional and international efforts in December 1996.

Status
Efforts to facilitate the transfer of environmentally-sound technologies (ESTs) to small and medium sized enterprises include the following:

- UNIDO clean technologies workshop (1996) and its follow-up.
- The support of the United Nations Development Programme (UNDP) to private sector intervention in the environment agenda with identification of PPP actions.
- METAP/SBA: Delta workshop in Amman and its follow up.
- Environment committees are being established in most umbrella organizations with international links (ICC, Adène).
- The United Nations Industrial Development Organization (UNIDO), the European Union and others are assisting the Lebanese Norms Institute to introduce the ISO 14000 series issues at the level of the private sector organizations and concerned line ministries (mainly Ministry of Trade and MoE).

ESTs are most urgently needed in the following areas:
- Industries: The need exists to reduce waste generation through recycling and reuse of products. Additionally, the generation of liquid waste from point sources is a major problem.
- Transportation: The need to create availability and incentives for public transportation, less pollution fuels for cars (unleaded), auto inspection enforcement etc.
- Power generation sector: All power plants in the country lack the necessary air pollution prevention equipment (such as scrubbers); while the fuel used to operate these plants has high levels of sulfur.
- Waste Management: The use of bio gas technology.

Concerning freshwater, the major priority for government is to supply water, which is free of bacteriological contamination. Concerning wastewater, the government's target is to have primary treatment with sea outfalls operational for all of the urban areas of the coastal zone by the year 2002.

In the area of waste management, the master plan is to include proposals to treat all kinds of waste, domestic and industrial. Feasibility studies have been done and activities have begun. Sewage networks have been installed so far in some areas; however, the majority of houses need to be connected. Others are still using collection wells, which are a major source of ground water pollution due to their lack of being up to sanitary standards. Currently, all waste is channelled directly to rivers or to the sea.

Sukleen, a private waste management company, has recently began door to door collection of waste for recycling/reducing purposes; A composting plant will start operation soon under the management of this company. These activities are taking place under the supervision of the Ministry of Environment. UNDP'S LIFE and UMP programs sponsored solid waste recycling programs in various forms.
Cimenterie National (a cement factory) undertook a major rehabilitation plan to install cleaner technology with a $50 million loan from the IMF.
INDUSTRY

Decision-Making: Strategies, Policies and Plans
A policy on industry is in the process of being formulated under the CAPACITY 21 program framework. The Ministries of Environment, Economy and Trade, and the Ministry of Industry will be responsible for the implementation.

No green industries exist in Lebanon as of now. However, a strategy of networking among private sector groups to promote eco-efficient projects, environmental management systems and public-private partnership project is being developed by UNDP CAPACITY 21 program.

Status
The principal threats resulting from industrial activities are air pollutants from power generation plants, cement factories, and various light industries and surface and ground water pollution from industry point sources such as tanneries, metal coating, etc. Almost all industrial effluents are discharged in ground or surface waters without any treatment.

Information
Reports on industrial development and ecologically sustainable industrial development are being prepared for UNDP's CAPACITY 21 program on the scope of work of the national CAPACITY 21 program on strengthening private sector capacities.
TRANSPORT

Decision-Making: Coordinating Bodies

The Directorate of Roads within the Directorate General of Roads and Buildings of the Ministry of Public Works (MPW) is responsible for management, construction and maintenance of the classified road network. Responsibility of major highways is shared by the Executive Council for Master Projects (CGEP), a semi-autonomous agency overseen by the MPW, and the Council for Development and Reconstruction (CDR). CGEP is responsible for construction of the large infrastructure projects (for example the coastal highway and the Beirut-Syrian border highway). CDR is presently in charge of Greater Beirut Entrances project.

The Directorate for Urban Planning within MPW is in charge of setting rules, regulations and designing plans relative to land occupation.

The Ministry of Transport is responsible for: (1) regulating and supervising air, sea and land transport issues, (2) establishing, equipping and investing in transport systems within the public sector and developing these systems according to social and economical development needs of the country, (3) preparing plans as well as technical and economical studies aiming at activating transport systems with maximum technical efficiency and economical feasibility, and (4) enforcing laws and regulations relative to transport and marine public domains (Law 214, 1993).

The railway and Public Transport Authority (RTPA) is an independent public authority under the supervision of the Ministry of Transport. Reactivated and enlarged in 1994, the Land Transport High Council coordinates all land transportation activities. There is no national port authority.

In addition, the following ministries/authorities are responsible for the following tasks: The Ministry of Energy (fuel); Ministry of Interior (car licensing and enforcement of road safety); the Ministry of Environment (set standards for environment protection) and the local authorities/municipalities (local/secondary roads).

A Higher Council for Terrestrial Transport was established in 1996 (law no. 5540/66 and amended by law no. 4775/94). This Council is made of representatives from the Ministry of Transport, Ministry of Public Works, Ministry of Interior, Ministry of Economy and Trade, Ministry of Defense, Customs, and the Service for vehicle registration). This Council has as among its mandates to:

- Study the economic basis aiming at developing, regulating, coordinating and controlling the inland transport industry;
- Study the evolution, density and types of the railway transport system;
- Study ways of using roads and establishing transport lines and roads as well as stations for departures and arrivals;
- Study the necessary programmes to train pedestrians- including students- in various available means including radios, TV, and newspapers;
- Study basis to train staff in charge of controlling traffic systems.

According to staff operating at MPW, no real coordination among the above-mentioned institutions has been effective till this moment. However, the public system implies an indirect coordination when the Ministry in charge drafts a law or decree to be presented to the Council of Ministers for approval before it is sent to the Parliament for ratification. The approved text is published in the official gazette.

Upon receipt of a decision or an inquiry from the Ministry in charge, Governorats (Mohafazats) forward these texts and requests to public authorities for execution. In addition, municipalities are responsible for implementing local or secondary roads (mainly agricultural roads), the classified roads being affiliated to other authorities. They are also in charge of enforcing the application of measures and regulations relative to local traffic and traffic safety.
Decisions pertaining to transport system are still within the scope of the authorities in charge. However, and according to PIU sources, a field survey was carried in the context of the study on the road system (commissioned to Dar Al-Handasah) prior to formulation of the proposed strategy.

**Decision-Making: Legislation and Regulations**

A long list of laws and decrees are present to regulate the transport system and traffic in Lebanon. Some of these laws are the following:

1st- General regulation:

- Law no. 214/93: Establishment of the Ministry of Transport.
- Law no.13677/63: Establishment of the Center for the Safety of Civil Aviation.

2nd- Construction of roads and highways:

- Law 1/5/1950: Subdivision and building operations of highway frontage sites along Khaldeh Boulevard.
- Decree no. 1423/52: Application of law 1/5/1950 on similar highway frontages in Beirut, Tripoli and Saida;
- Law no. 11/93: Imposition of setback from road center line and sidelines;
- Decree no.15299/64: Setbacks requirements from road center line and side line: national roads (16/5 m), main roads (12/4.5 m), local roads (10/4).
- Decree no. 3380/65: Conditional exemption of national roads from Decree no. 15299.
- Decree no. 1315/66: Amended by Decree no. 1742/79: Classification of road network; 4 categories:
  1. national roads,
  2. main roads/inter and inner mohafazats,
  3. minor roads/ inter caza,
  4. local roads/ inter-village.
- Decree no. 10619/68: highway regulations.
- Decree no. 4130/66: Ratification of Beirut-Tripoli highway, Maameltein- tabarja section.
- Decree no. 11164/68: Application of Decree 10619 on Jounieh-Tabarja highway.
- Decree no. 7110/74: Amendment of Tabarja-Tripoli Highway (section Balsas Al-Mina).
- Decree no. 3140/93: Ratification of Tripoli-Syrian Border highway with side roads (3-m setback).
- Decree no.8086/96: Subdivision of highway frontage sites, Northern Lebanon highway.
- Decree no. 7734/95: Widening of Beirut-Tripoli Highway.
- Decree no. 20399/58: Ratification of Beirut-Saida highway.
- Expropriations for road expansion (decrees 12273/98, 11846/98, 12273/98 and 12077/98)
- Decree no. 13379, dated 5 November 1998, for re-organizing the institutional structure of the Directorate of Roads.

3rd- Traffic system:

- Decision no. 584/95: Definition of time allocated to Trucks circulation;
- Decision no. 528/95: Definition of time allocated to motorcycles circulation;
- Law no. 6603/95: Definition of conditions for use and monitor trucks, buses and vehicles operating on diesel fuel, regulation of smoke emissions and quality;
- Law no. 368/94: Permission to import and use diesel operating trucks and buses.
- Law no. 150/92: Ban on import of cars which date of manufacturing exceeds 8 years.

4th- Ports and harbors:
Decision no. 31/1 date 1966: Regulations of Lebanese ports and harbors;
Decision no. 209/1 date 1991: Regulating the maritime activity in ports.

None of these laws were reviewed to include environmental specifications. It is expected that the Environmental Unit established in the Ministry of Public Works via ministerial decision no. 7/1 dated 13 January 1997, to monitor and supervise the environmental analysis of road projects, will assist in drafting and formulating needed texts to ensure atmospheric protection from transport sources, as well as applying the EIA procedures for the implementation of any road project.

The Decision 52/1 (1996) issued by the Ministry of Environment, and pertaining to specifications and rates relative to reducing pollution of air, water and soil. Four Annexes were included with relevant interest to the protection of the atmosphere (Article 1), these are:

- Annex 11: Maximum value allowed for the emissions of air pollutants resulting for used burned oils;
- Annex 12: Maximum value allowed for the emissions of air pollutants resulting from domestic waste incineration.
- Annex 13: Maximum value allowed for the emissions of air pollutants emitted from cement factories;
- Annex 14: Maximum value allowed for ambient air pollutants.

### Maximum allowed values for ambient air pollutants

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Maximal value $\text{UG/m}^3$</th>
<th>Exposure duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur dioxide ($\text{SO}_2$)</td>
<td>350</td>
<td>1 hour</td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>24 hours</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>1 year</td>
</tr>
<tr>
<td>Nitrogen Dioxide ($\text{NO}_2$)</td>
<td>200</td>
<td>1 hour</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>24 hours</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>1 year</td>
</tr>
<tr>
<td>Ozone ($\text{O}_3$)</td>
<td>150</td>
<td>1 hour</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>8 hours</td>
</tr>
<tr>
<td>Carbon monoxide (CO)</td>
<td>30000</td>
<td>1 hour</td>
</tr>
<tr>
<td></td>
<td>10000</td>
<td>8 hours</td>
</tr>
<tr>
<td>Total suspended bodies</td>
<td>120</td>
<td>24 hours</td>
</tr>
<tr>
<td>Black suspended bodies less than 10 microns ($\text{PM}&lt;10$)</td>
<td>80</td>
<td>24 hours</td>
</tr>
<tr>
<td>Lead</td>
<td>1.00</td>
<td>1 year</td>
</tr>
<tr>
<td>Benzene</td>
<td>5 ppb</td>
<td>1 year</td>
</tr>
</tbody>
</table>


**The Law 6603** (issued 1995, Ministry of Environment) defines in its article 1 the conditions for use of large vehicles (trucks), buses, diesel operating vehicles, in addition to monitoring the acceptable average and quality for smoke emissions. This law defines the maximum allowed main pollutants emitted by these vehicles according to the following rates:

<table>
<thead>
<tr>
<th>Type of pollutants</th>
<th>Maximum allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>$10 \text{ mg/m}^3$ Carbon Monoxide (CO)</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>$0.1 \text{ mg/m}^3$ Nitrogen dioxide ($\text{NO}_2$)</td>
</tr>
<tr>
<td>Hydrocarbures</td>
<td>$0.16 \text{ mg/m}^3$ Hydrocarbures (HC)</td>
</tr>
<tr>
<td>Smoke</td>
<td>$0.075 \text{ mg/m}^3$ smoke (TSP)</td>
</tr>
</tbody>
</table>

Source: Law no. 6603/95- Annex tables
Also the article 2 of the same law defines Diesel specifications as follows:
- Sulfur should not exceed 0.5%;
- Lead free;
- Water free;
- Residues free.

**Decision-Making: Strategies, Policies and Plans**
In 1999, the Council for Development and Reconstruction prepared a Five Year Development Plan FYDP (2000 – 2004). The FYDP social and public Programme aims at improving the living conditions throughout the Lebanese territory. In this respect, roads and Highways are considered as a priority, especially in terms of:

- Maintenance of classified and unclassified road network;
- Rehabilitation of road in poor and critical conditions;
- Execution of roads projects required for urgently needed upgrades of public services;
- Elimination of critical traffic congestion through upgrading of existing roads or construction of new roads;
- Upgrade of important international roads and highways;
- Access to deprived areas and improvement of classified road network connectivity;

For the Ministry of Public Works, the overall strategy is to rehabilitate an estimated total of 7000 km of road network according to international norms. Effectively, a study to assess the road network was conducted by Dar Al-Handasah (Consultancy firm) and indicated that a sum of 1.5 billion U.S$ is needed to rehabilitate the whole current network evaluated to 7000 km long. Due to unavailability of funds, a priority programme was set and which identified 400 km of roads as critical and urgent to be rehabilitated on the national level. It is to note that this sum addresses the reconstruction section (deviation, road expansion, and expropriation) but does not encompass the maintenance costs evaluated to 300 million dollars per year. To overcome the financial deficit, financial scenarios are solicited. This strategy is currently in the Council of Ministers for study of the suggested alternatives and options.

On the other hand, a decentralized Transport Road Fund is planned to be put in place to finance all projects pertaining to the transport infrastructure (still under discussion).

Concerning the Council for Development and Reconstruction, priority will be given to rehabilitation projects of regional roads, due to the relative scarcity of funding. As far as Beirut is concerned, besides the completion of projects which are underway or currently under preparation, the focus will be on the improvement of existing roads (traffic lights, over/underpasses).

A Master transport plan will be undertaken by European consultants at the Ministry of Public Works in order to increase coordination between the Directorate for Urban Planning and the Directorate of Roads in the context of transport system. This master plan is expected to be finalized in 2003.

**Programmes and Projects**
The National Roads Project (NRP), funded by the World Bank, was established in the Ministry of Public Works (in 1997) to assist the Ministry in implementing a programme of urgently needed rehabilitation works and strengthening institutional capacity in the road sector. A three-year programme is carried out to:
- Rehabilitate 400 km of international, primary and secondary roads distributed among the four Mohafazats (governorates); the first year pilot programme consisted of four packages to rehabilitate about 150 km of international and primary roads;
- Strengthen the Directorate of Roads’ capacity to develop the road rehabilitation works, including preparation of standards documents, manuals, procedures and guidelines.

The Council for Development and Reconstruction is currently preparing the following projects to be implemented within the five-year plan:
1. Penetrator Roads Associated with Beirut Ring Road;
2- Rehabilitation of Road Networks in Beirut Suburbs;  
3- Beirut Urban Transport project.  
4- Rehabilitation of Primary and Secondary Roads

In Beirut, a Beirut Urban Transport project is currently under implementation. This project aims at improving the traffic in Beirut. It consists of three components:

- Improvement of passages, which includes the construction of 16 overpasses or underpasses in addition to main passages;  
- The installation of 220 traffic signals, 30 traffic monitoring cameras, road signs, road marking, the construction of traffic surveillance and management centers as well as pavements works.  
- Parking management programme for 5,000 car spaces by using parking meters.

The project cost is estimated to be around US$ 100 million; the World Bank, being likely to provide part of the funding (between US$ 60 to 70 million). It is implemented at the Ministry of Transport.

The National Roads Project (NRP) aims at assisting the Ministry of Public Works in implementing a programme of urgently needed road rehabilitation works through financing a pilot programme comprising component of sector reforms to strengthen institutional capacity in the road sector. The NRP main objectives are to:

- Implement a pilot road rehabilitation programme in support of the Road Rehabilitation Programme;  
- Strengthen institutional capacity for maintenance and development of the national road network;  
- Reduce reliance on the government’s budget by requiring users to pay for the provision of roads.

In 1996, A Programme Implementation Unit (PIU) was established at MPW to assist the Directorate of Roads in:

- Preparing for the implementation of the Road Rehabilitation Programme;  
- Preparing for the institutional and financial reform of the road sector;  
- Defining appropriate organizational structure for the road sector institutions and establishing their operating procedures;  
- Defining the road sector capacity to mobilize resources to finance the rehabilitation and improvement of the road network.

**Status**

Provision of transport services is yearly upgraded in terms of rehabilitation of road networks, traffic regulations and public transportation (reaching most of rural areas). The inadequacy could be highlighted as follows. As mentioned earlier, Lebanon transportation sector is estimated to a fleet of over one million registered vehicles that could be characterized as being relatively old and poorly maintained. Moreover, the rate of car ownership (3 persons for every car) is amongst the highest in the world. Therefore, it is very frequent to see vehicles with only one rider per car, thus inducing high traffic congestion especially in urban areas. Traffic congestion in urban areas is severe, especially in Greater Beirut and the entrances of Tripoli, Jounieh and Sidon. They would be near 650.000 vehicles nationwide, of which 440.000 in the coastal zone.

On the other hand, the number of red-plated vehicles has increased significantly from around 10.000 vehicles in 1994 up to 32.000 in 1999. These cars compete with two operational bus services, one publicly owned while the other is private and being more efficient. This sector has witnessed a significant improvement in the bus fleet size but with a noticeable disproportionate increase in ridership. Two negative issues accompanied this improvement are

1. The lack of stations, a matter that is increasingly contributing to the over-crowdedness especially in urban areas, and  
2. the switch to the use of diesel (instead of fuel), thus increasing the level of atmospheric pollution.

The classified road network plays an important role in activating the socio-economic sector in Lebanon. It is well developed and distributed throughout the country (0.6 km/km2). The present network is composed of around 6330 km of asphalt roads subdivided into four categories: International roads (530 km), primary
roads (1650 km), secondary roads (1340 km) and local roads (2810 km). The prolonged years of conflict (1975-1990) has badly affected the road network. An inventory showed that only 18% could be categorized in good conditions, 47% in fair conditions and 35% in poor to critical conditions. The three-planned toll roads (Arab Highway, Northern Coastal Highway and Beirut beltway) are expected to alleviate traffic congestion and urban air pollution.

The Beirut International Airport has been subject to a thorough rehabilitation and expansion. It is expected that 2005 will finalize these works.

The three main lines of the railway system (including 224-km coastal line from Saida to Akkar) were badly damaged during the war. The regional environmental assessment report of the coastal zone (1997, CDR) pointed out to the difficulty of rehabilitating the old railway system and of building a new system further inland due to difficult topography. Studies have been conducted for the rehabilitation and upgrading of 170 km of rails along the coast. However, in light of the concerns raised about the potential impact of such an upgraded railway on the coastal area, the feasibility of an alternative alignment is being considered.

There is a need to create availability and incentives for public transportation, less polluting fuels for cars (unleaded), auto inspection enforcement etc.

Vehicle emissions in urban areas, and especially in Greater Beirut, are likely to be causing elevated lead and ozone concentrations. However, data are still sparse regarding the extent of air pollution and its health impact. The Mediterranean Country profiles (Lebanon) pointed out that in 1996, vehicle emissions of NOX were estimated at about 32,000 tons in 1994, or 70% of total; by 2010, the total volume of NOX emitted by vehicles is expected to increase by 60%, so overall air quality is likely to deteriorate. Estimated maximum hourly carbon monoxide (CO) concentrations in the immediate vicinity of heavily trafficked roads are likely to approach or exceed WHO guidelines for health. Estimates of particulate emissions from vehicles (780t/year in 1993) are considered high enough to contribute in damaging health.

Despite the efforts made by the Ministry of Environment to propose plans and strategies pertaining to sustainable fuel consumption, these initiatives were still not officially adopted and they are subject to negotiation at ministerial and parliamentary levels. These suggestions are based upon (1) being a non-producer country, Lebanon is considered as a major fuel consumer due its consumption of all imported quantities, (2) the increasingly pollution rates caused mainly by traffic.

However, it is worth mentioning that although fuel prices are increasing due to additional taxation, these increases are estimated to imply a minor impact on fuel consumption due to the lack of adequate alternative means for transport unanimously accepted at social level.

In 1998, fuel consumed in the transportation system was the following:

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>Quantity (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline (road)</td>
<td>1242803.3</td>
</tr>
<tr>
<td>Diesel oil (road)</td>
<td>40906</td>
</tr>
<tr>
<td>Jet kerosene</td>
<td>1910</td>
</tr>
<tr>
<td>Gasoline (navigation)</td>
<td>378.61</td>
</tr>
<tr>
<td>Diesel oil (navigation)</td>
<td>29.2</td>
</tr>
</tbody>
</table>


Vehicle fleet in Lebanon has considerably improved following the ban on the import of cars older than 8 years. The fleet’s condition is expected to improve so that by year 2005 its average age will drop to around 10-12 years compared to the 14 years average of 1994. It is worth mentioning that estimates on the size of the vehicle fleet vary according to sources, estimated to be ranging between 500,000 privately owned cars to 800,000 vehicles. The annual distance traveled was also estimated to 14000 km in 1994.
On the other hand, it is expected that buses used for private and public transport will increase due to the government intention to expand public transport in the entire territory.

<table>
<thead>
<tr>
<th>Number of vehicles</th>
<th>1994</th>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars and Jeeps</td>
<td>914000</td>
<td>999000</td>
<td>1077000</td>
</tr>
<tr>
<td>Taxis and microbuses</td>
<td>9000</td>
<td>30909</td>
<td>32486</td>
</tr>
<tr>
<td>Big buses</td>
<td>4000</td>
<td>4566</td>
<td>4799</td>
</tr>
<tr>
<td>Trucks and others</td>
<td>85000</td>
<td>99846</td>
<td>104939</td>
</tr>
</tbody>
</table>


Non-motorized transport (e.g. bicycles) is still not applicable yet in urban and rural areas, although there is a high potential of success in adopting and promoting these measures in the cities rehabilitating and preserving their old centers. The use of these alternative measures is left as an individual option.

Inside Greater Beirut, most of the measures are within the scope of traffic control rather than traffic jam reductions. On highways, trucks and heavy cars are subject to strict traffic hours to reduce the traffic flow during the day (restriction of circulation between 6.30 a.m. and 8.30 a.m. during peak hours). However, this regulation is not homogeneously enforced all over the Lebanese territory.

Due to increased number of accidents, especially after opening highways, the Committee for Traffic Affairs (represented by ministries’ representatives) put in place series of traffic safety measures to reduce the number of accidents and deaths (such as traffic signs, limitations of car speed, enforcement rules through radars carried out by the Ministry of Interior, pedestrian safety, etc.).

Cycleways and footways are still restricted to old centers (Beirut downtown, Byblos, Jounieh, Zouk).

Remote rural areas are definitely in most needs for a sound transport system. However, the Ministry of Public Works does not base its priorities according to region or population needs. It is rather standing on two issues: (1) the volume and density of traffic in a given area (cost-effectiveness of rehabilitation and annual maintenance) and (2) adopting the balanced development concept in the 6 Mohafazats (Governorates) of Lebanon (i.e. projects are carried out in these areas in equal time). Consequently, selected areas are assessed, then projects and funds are launched in same duration and cost.

Consultancy firms are the field executors/supervisors for the rehabilitation and expansion of the road network.

**Challenges**

Upgrading the public transport system and enforcement of existing traffic regulation, especially banning the use of leaded fuel and diesel.

- Weak coordination with other concerned institutions at the institutional level.
- Lack of synchronization of works execution: In many circumstances electrical installations are implemented after roads are rehabilitated or created, which results in damaging the roads and a repetitive operation of road rehabilitation, thus inducing a increase in costs allocated to works on one hand, and a decrease in trust of public authorities in charge on the other hand.
- Lack of regulatory enforcement, especially law no. 76/67 relative to the law of traffic. Roads are usually designed based on a certain speed limit. This lack of traffic enforcement, which is the responsibility of the Ministry of Interior, constantly results in an increasing rate of accidents and deaths. In addition, the mobile axle road weighing system used to measure trucks observed rates of 22 tons (while the allowed weight is 13 tons), which is unsafe and cause damage to the road network on the long run (faster and higher depreciation rate).
- Open highways with no safety measures.
- Financial restrictions.
- Lack of awareness among decision-makers and public.
- The slow down of the economical situation;
- The intensive campaigns undertaken by car-selling companies that promote their products with incentives such as no down payments, credit facilities, etc., and the total absence of non-motorized selling companies as another alternative.
- The use of bicycles and public transport is not a social habit in urban areas.
- In addition, the Directorate of Roads in the Ministry of Public Works, which is responsible for road maintenance, has suffered severe depletion in its institutional capacity leading to shortage in meeting the requirements of the maintenance and rehabilitation of the road network.
- Fuel Prices: The difference between leaded and unleaded fuel is as low as 100 Lebanese pounds; not much an incentive to change from leaded to unleaded fuel.
- Lack of national awareness campaigns on the advantages of using unleaded fuel and the application of catalytic converters, and its relation with a better environment and public health, and a lower cost of car maintenance if unleaded fuel is used.
- Lack of regulatory enforcement.
- Bad economic situation.

**Capacity-building, Education, Training and Awareness-raising**

An NGO called Youth Association for Social Awareness developed an auto-guide of 400 pages that include traffic signs, important notifications on accidents, important notifications for drivers, necessary car equipment, recommendations on the usage of seatbelts, short travels, etc., traffic law, and many other required data to ensure safety and educate the public on traffic regulations. This guidebook is sold (and not distributed) for an amount of 15 US$. During the last 2 months, this NGO undertook a wide awareness campaign to promote using safety measures such as seatbelts and exposing threats relative to high-speed excess.

In addition, TV spots are provided by the Committee for traffic affairs to increase awareness on traffic safety issues.

The following examples were extracted from the guidebook “Environmental education: curriculum and goals” - Pre-university levels. This guidebook was published by the Ministry of Education and disseminated to all schools in 1998 based on law no. 73/M/98, date 13/11/1998. It is to note that this law requires schools (private and public), publishing houses, and schoolbook writers to abide by the obligations included in this law.

General Title: The man and its surrounding:

<table>
<thead>
<tr>
<th>Content</th>
<th>Area of study</th>
<th>School year</th>
<th>Pedagogic goals (knowledge, skills, position)</th>
<th>Suggested activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cities</td>
<td>English language</td>
<td>5th and 6th elementary</td>
<td>Encourage on not disturbing others with the noises coming from cars and motorcycles (noise pollution).</td>
<td>Documentaries on cities from the World, with focus on Lebanese cities.</td>
</tr>
<tr>
<td>* Some environmental pollution problems in cities</td>
<td>Geography</td>
<td></td>
<td>Indicate examples on urban problems (transport, pollution, traffic, noise, buildings, etc.)</td>
<td>Stories and discussions. Brainstorming.</td>
</tr>
<tr>
<td>* To abide by regulations and sound practices.</td>
<td></td>
<td></td>
<td>Increasing needs of urban citizens related to urban planning: public gardens, fast roadways structure, etc.</td>
<td>Working groups on urban planning issues. Outdoor sessions to learn about some pollution problems in cities, and suggest solutions. Video on cities’</td>
</tr>
<tr>
<td>* Problems of suburbs and the gaps of urban planning</td>
<td>Geography</td>
<td>1st Secondary</td>
<td>Enumerate data on pollution and noise and their levels. Indicate types of pollutants in cities and classification into chemical, physical and biological.</td>
<td></td>
</tr>
</tbody>
</table>
issues pertaining to pollution in specific.

| * Adequate means to prevent urban environment degradation | Geography Arabic language | 2nd Secondary | Abide by conditions of not destroying urban environment: Public domains; Noise pollution; Public health; Traffic regulations; Urban landscape. |


In 1995, a UNDP project on Civil Aviation Basic Technical Training and Oversight Safety Programme” was launched with the objective to provide training courses to approximately 200 nationals who are to be recruited and trained over a three-year period in the major disciplines of air traffic control, communications, meteorology and equipment maintenance. Furthermore, the project is intended to establish national capabilities for exercising the DGCA’s safety oversight responsibilities. Until now, a training center was initiated, around 56 students-trainees were trained in various department in the airport, and recently competitive examinations were initiated by the Civil Service Board for the selection and recruitment of new groups of trainees.

The European Commission will initiate an Investment Planning Programme (IPP) which aims at providing technical assistance to planning and implementation of national programmes. In the case of the Ministry of Public Works, this programme entails:
- Strengthening MPW road administration to implement the Road Rehabilitation Programme through effective planning, budgeting, programming, design and construction of road rehabilitation projects; more appropriate programming and implementation of road maintenance works, and environment assessment;
- Assisting the Directorate of Roads in preparing for the implementation of the Road Rehabilitation Programme;
- Assisting and devising MPW in establishing and conducting negotiations with donors or private investors to arrange financing of the RRP;
- Training managers, engineers and technicians to carry out their various functions.

The only currently identifiable trainings were already made to Ministry of Public Works civil servants by the Programme Implementation Unit on various aspects of tasks carried out by this Unit.

**Information**

The Programme Implementation Unit prepared a list of existing national database on the road sector, and overviewed the transfer of this database to the Directory of Roads. The database included the road inventory and condition survey developed on GIS, roughness measurements, axle road survey, vehicle operating cost survey and traffic survey. It also included the creation of a database of the network using Geographic Information System (GIS).

Scientific data on vehicle emissions is usually available at the American University of Beirut through their research programmes, the Ministry of Environment (studies) and international funding agencies, but they are restricted to concerned groups.

The only daily traffic news on traffic and road conditions (jams, works, etc.) are made available through daily reports provided by radios and TVs. Approximate vehicle emissions are not publicly disseminated, they are available to interested individuals and entities upon request from the institution in charge.
Research and Technologies

A comprehensive Road Rehabilitation Programme (RRP) was developed at the Ministry of Public Works to carry out a systematic evaluation of rehabilitation needs for the road network, using the Highway Design and Maintenance Standards Model (HDM) and its supporting Expenditure Budgeting Model (EBM) which have been developed by the World Bank. The study comprised a visual road inventory, roughness measurements, and a series of operating cost, axle load and traffic surveys.

In 1999, Harvard Institute for International Development (HIID) financed a study entitled “Economic and social impact of mobile source pollution on public health in Greater Beirut Area”, in cooperation with the Ministry of Environment. The Lebanese Center for Policy Studies (LCPS) undertook this study that investigated concentration levels of various air pollutants and their effects on public health as well as calculated the total annual cost of air pollution on health in Beirut. The study concluded with a set of technical, managerial, financial and educational policy options and recommendations for decreasing mobile source pollution.

The Final Report of the Climate Change project reported that some technologies started to be promoted in Lebanon. This entailed for instance the development of hybrid electric vehicles (HEV) with a consumption rate equaling almost 60% of that of equivalent conventional fuel-driven cars, with a unit price almost 25% higher than the equivalent petrol-driven vehicles.

The increase in traffic safety, proposing alternatives to leaded fuel and the increase discussions on providing solutions to the current traffic systems are main issues that are now frequently discussed at parliamentarian level. However schemes are not materialized yet.

A Traffic Management guideline was prepared by the Ministry of Public Works- PIU for implementation during maintenance and rehabilitation works in order to reduce impacts resulted from the disruption of traffic flow and access patterns.

Also, technical manuals are currently under preparation by the PIU and relative to the Standard Technical Specifications (for Roads and Bridges), maintenance manual, road safety and signing manual, and other documents that contribute directly or indirectly for a better traffic management.

The final report of the Climate Change project suggested schemes enabling to travel with lower emissions. Measures applicable within this context include promoting public transport and freight railway systems. Since almost one-half of the national small vehicles fleet operates in Greater Beirut, and the rest spread all over the territory, a 20% reduction will translate into a 10% reduction in automobile related trip making at the national level. In this case, it is considered that the private autos annual growth rate will drop from 1.5% to 1% (200-2004), and to 0.7% for the year 2005 and beyond. These rates would result in car fleet in 2015 10% smaller than that of the base case.

Financing

The Five Year Development Plan (2000 – 2004) prepared by the Council for Development and Reconstruction showed that a total of 1.736.500.000 US$ is allocated for roads and highways, and 145.693.000 US$ for the transport, corresponding respectively to 27.30% and 2.29% of total. The estimated expenditures over 2000-2004 are respectively 1.436.500.000 US$ (corresponding to 1.492.500.000 US$ from the national budget and 244.000.000 US$ of foreign funding) and 105.693.000 US$ (143.347.000 US$ from the national budget and 2.346.000 US$ of foreign sources).

For five years, they are allocated as follows:

Roads and highways
- Rehabilitation of roads in poor and critical conditions: 1.388.500.000 US$ (54.000.000US$ are IBRD funds);
- Elimination of critical traffic congestion through upgrading of existing roads or construction of new roads: 164.000.000 US$ (139.000.000 US$ are foreign funds e.g. KFAED, IBRD proposed);
- Upgrading important international roads and highways: 184,000,000 US$ (51,000,000 US$ are foreign funds e.g. IDB, KFAED);
- BOT project and Arab funds: 1,300,000,000 US$.

**Transport**
- Provision of equipment necessary for proper operation of existing transport facilities, including:
  - Beirut International Airport Rehabilitation and Extension: 2,000,000 US$ (national funding);
  - Rehabilitation of the Port of Beirut: 693,000 US$ (173,000 are funded by Belgium);
  - Rehabilitation and extension of existing regional commercial port capacity to accommodate for future demand growth: 93,000,000 US$ (1,000,000 US$ funded by France to provide maritime safety equipment for the southern coast of Lebanon);
  - Upgrade of public transport efficiency and capacity: 45,000,000 US$ (public fund). This item includes the purchase of 250 buses (25 passengers/bus);
  - Further studies on transport issues, e.g. railroads, public transport, master plan for urban transportation, etc.: 5,000,000 US$ (public funding).
  - BOT projects to lease, operate and manage airport facilities: 111,000,000 US$.

**Capacity building**:

**Building infrastructure**:
The total cost for the current rehabilitated infrastructure is estimated to be 400 million dollar, from the Ministry of Public Works budget (1995-2000). The NRP is a World Bank loan to the Government of Lebanon. The estimated total cost is US$67.8 million, shared between the Government of Lebanon (US$25.8 million) and the World Bank (US$42 million).

**Supply of fuel**;
Government funds.

**Research and development of alternative fuels and transport efficiency**;
The IPP total cost is estimated to 30 million ECU, which will be financed through EC grant of 25 million ECU and government contribution of 5 million ECU. In this respect, the technical assistance provided to strengthen the institutional capacity of the Directorate of Roads is estimated of 4.7 million ECU.

**Enforcement of regulations and standards**.
The Government, through the budget allocated to the Ministry of Interior.

The FYDP stated that the transport sector is considered as a priority in the following period in order to achieve balanced development in the country and attract investors. Also, the Plan proposes means to attract foreign investors that are hindered by administrative procedures inside Lebanon and in their respective countries.

**Cooperation**
Lebanon ratified several bilateral agreements to regulate the transport system. Some of these are:
- The Law 86, date 14/6/1999, allowed the government to sign an agreement relative to the international terrestrial transport between Lebanon and UAE, signed 27/5/1998. This agreement aims at developing and promoting cooperation in transporting people and goods.
- The Law signed in February 1994 allowed to establish a cooperation agreement between the Lebanese Government and the Syrian Government, signed in 16/9/1993. The objectives of this agreement are to:
  - Social and economic cooperation and coordination;
  - Health agreement;
  - Regulating transport of people and goods;
  - Cooperation and coordination in the agricultural sector.
Air transport bilateral agreements are being signed and activated with the following countries: Armenia (law no. 28/97), Sri Lanka (law no. 615/97), Republic of China (law no. 618/97), Brezil (law no. 652/97), Poland (law no. 116/69), Bulgaria (law no. 11644/69), Indonesia (law no. 5192/73) and Tchad (law no. 9131/73), Holland and France.

Lebanon signed and ratified several international agreements, these are:

- Agreement to enforce regulations pertaining to international air transport (Varsovia, law no. 160/33);
- International Chicago Agreement for Civil Aviation (law issued 2 April 1947);
- Lebanon signed the Three protocols for the amendment of the international civil aviation set in Chicago in 1944 (law no. 356/94);
- International Agreement on the acknowledgment of the rights on airplanes held in Geneva (law no. 11640/69);
- International Rome Convention signed in 7/10/1957 regarding the definition of rights resulting from damages on lands caused by airplanes;
- The Agreement held between Countries member of the Arab League stating the establishment of a Council of Civil Aviation for Arab Countries;
- A law no. 61/64 stated that Lebanon is a member of the International marine conventions:
  - Intergovernmental Consultative Organization of the Marine navigation (ICOM)
  - The agreement relative to defining freight lines- London 1930
  - Barcelona Convention and its four Protocols (law no. 292/94);
  - United Nations Convention on the carriage of goods by Sea (law no. 4/83);
  - International Convention on the limitation of responsibility of boats owners (law no. 294/94).

The commitment of Lebanon towards obligations required by these agreements were not fully assessed.
SUSTAINABLE TOURISM

Decision-Making: Coordinating Bodies
The concept of sustainable tourism is not considered yet on the national level. However, all tourism issues are under the jurisdiction of the Ministry of Tourism, supported by the National Council for Tourism.

At the local level, the Ministry of Tourism works in co-ordination with the local authorities (municipalities).

Decision-Making: Strategies, Policies and Plans
No national strategy or policy for sustainable tourism exists. Available strategies and programmes are tackling sustainable tourism issues indirectly, such as in the case of promoting tourism in protected areas and their surroundings.

UNDP and the World Tourism Organisation (WTO) developed a plan for the reconstruction and development of the tourism sector in 1996. This Plan aimed at preparing and achieving a strategic plan for the reconstruction and development of tourism activities in Lebanon. It is based on the elaboration of marketing and management schemes that concern the following domains: financing, management, environment, marketing and training. However this plan was not really targeted towards sustainable tourism.

The Capacity 21 Programme is implementing Local Agendas 21 in four areas in Lebanon (West Bekaa Valley, Jal el Dib, Bourj el Barajneh and the Caza of Aley). Only the Caza of Aley includes within its local agenda an action plan that will promote sustainable tourism.

Decision-Making: Major Groups Involvement
With respect to the role of Major Groups in decision-making, up till now, the decision-making process has been restricted to the government level. Newly elected municipalities consider for the moment rehabilitation projects as their sole targeted priorities. Non-governmental organizations are largely involved through activities that they undertake and promote.

Status
The Protected Areas Programme of the GEF is conducted in five natural reserves. It was launched in November 1996 and has among its objectives developing eco-tourism and nature-based tourism in the reserves and the surrounding villages.

Tourism in Lebanon was based on a mix of beaches and mountains, with skiing in the winter months and the presence of a large number of archaeological and historical sites. Together with the agricultural sector, they used to provide 25% of GDP. Since 1972, pleasure trips have been considered as the main reasons to travel to Lebanon (84% of tourist stays), mainly for Gulf and European countries. Nowadays, international business tourism is the main source of international tourism of Lebanon (75% of Beirut hotel occupancy). And it is expected to increase to a large extent in the coming years.

Since the end of the war, the air transport conditions are subject to continuous deep changes, due to the return of the international airport activity as well as of the large number of international airways companies. The increase of the airport activity was highly noticed in 1994 (+11% compared to previous years). Two main factors are characterising this evolution: the increasing number of destinations towards Europe and Middle East countries, and the increase in the internal air market within the Middle East region itself.

In 1997, tourism output was around 1 milliard dollar and it slightly increased to reach 1.300 million dollars in 1998 (which corresponds to 6-8% of the gross national product). It is to note that most, if not all tourist activities (except the archaeological sites) are in the hands of the private sector.
On the other hand, no accurate estimations are available regarding the number of people working in the tourism sector. However, it is thought that around 30,000 to 60,000 people are employed, distributed among the following:

- Direct activities which include hotel business; tourism and travel agencies and tour operators; air transportation; guides; airport personnel; rent cars; taxis, etc.
- Indirect activities whereas goods and services are provided for the tourist-consumer (agricultural and agro-food products, hotel constructions, etc.);
- Induced activities generated by salary revenues (permanent jobs, part time jobs, week-end jobs, students jobs, etc.).

Data on tourism activities are weak. But it is estimated that about 400,000 tourists came to Lebanon in 1995, compared to 1.9 million visitor arrivals, including 500,000 Syrians in 1974. A survey done in 1991 by the National Council of Tourism showed that the stock of accommodation had fallen to only 6,630 rooms, out of which 1,660 were in Beirut itself and 3,195 in the Mount Lebanon area; while in 1974 the total number was 14,390 including hotel rooms, pensions and apartments.

At the end of the war, the Government set a ten-year reconstruction plan designed to rebuild the necessary basic infrastructure damaged during the war, taking into account the economic and social constraints. This investment programme started in 1993 and will last until year 2002. Unfortunately, the tourism sector is not considered as a priority within this plan, since only 190 million dollars, out of 11.7 milliards dollars, are to be invested by this sector (which is equivalent to 1.6%), during the period 1998 till 2002. It is foreseen that the government do not consider seriously the sustainable tourism and provide it with enough effort to empower this sector in general.

The current impact of tourism on other issues related to sustainable development, including those that are environmental, social, institutional and cultural, including the preservation of cultural heritage.

Rapid recovery in the tourism sector is likely to have mainly an impact on the environment through the accelerated denationalisation of the beaches and the development of holiday accommodation on the coastal zone. Moreover, the skiing industry is threatening the mountain environments through direct damage to the soil and the flora in the higher mountain areas, the pressure of people, the land taken for ski lodges and physical infrastructure, in addition to the possible deterioration of the air quality in the mountain areas, as most skiers visit their destination by car.

The seasonal nature of tourism also imposes a stress on the environmental services, such as the demand for water and the generation of liquid effluent and solid waste.

Currently, eco-tourism and nature based tourism are solely promoted through eco-tours companies and to a lesser extent non-government organisations. Their activities are limited to natural site visits and provisions from locally-made food.

In addition to the Programmes discussed in the earlier section, activities are executed through non-governmental organizations, for example the Association for Forest Development Conservation, Arz Shouf (Cedars) Society and the Environment Protection Committee-Tripoli.

Challenges
Constraints that exist to pursuing sustainable tourism include:
- Lack of professional staff: It is estimated that 3400 employees already working in the tourism field, supposed to be qualified, require technical upgrading.
- The expansion of urbanised areas to the detriment of green ones.
- The multiplication of secondary residences, quickly built with concrete, all over the coast and inland;
- The disappearance of buildings with traditional architecture.
- The progressive desertion of rural areas and the abandonment of agricultural terraces and small family farms;
- Lack of environmental education and awareness of the public;
- Carelessness of the decision making level towards introducing and integrating the sustainable issues within their programmes and specifically the tourism sector.
- Lack of need assessments on the local, regional and national level.

**Capacity-building, Education, Training and Awareness-raising**

No training programmes have been formulated for the tourism industry, despite of the urgent need. The tourism plan for reconstruction and development highlighted this issue, but it is still not being implemented. On the other hand, tourism technical highschools started this year to introduce sustainable tourism (eco-tourism and nature-based tourism) within their curricula.

There are no specific programmes to educate policy makers in the concept and policy design of sustainable tourism since tourism is not within the main policy designers priorities.

No awareness campaigns have been undertaken by the Government so far. Sustainable tourism practices are currently left to non governmental organisations to be promoted indirectly within their environmental and awareness activities, such as promoting locally made products, nature tours, etc.

However it is of utmost importance to mention that the concept of sustainable tourism in not enough understood, even in environmental governmental and non-governmental organisations, in order to be disseminated or explained properly to farmers, industries and scientific communities.

Efforts underway to use established tourist centres or literature to promote sustainable tourism include:

- The Barouk Cedar Reserve is currently under way to establish a tourist and visitor centre that will be used partially to promote eco-tourism and nature based activities as well as locally made products.
- Literature is very rare in this field, and it is currently restricted to some articles released in specialised magazines or newspapers. However, it is worth mentioning that eco-tourism and the economic feasibility of tourism in protected areas are currently under study at the American University of Beirut, in the context of master research.

**Information**

Although the Ministry of Tourism created a Statistics Department in 1994, data on tourism remain rather sketchy, and the very few available touristic data are found in documents or references concerned with development or nature conservation. However, the Tourism Plan for Reconstruction and Development final report, which was prepared by UNDP and WTO in 1996, includes valuable information on geographic, social and economic context, legal and institutional aspects, touristic sites, etc. This report is available at the Ministry of Tourism and UNDP offices.

Mapping and inventorying of natural resources are/were conducted through several studies:

- Tourism Plan for Reconstruction and Development, Ministry of Tourism (1996);
- The Regional Environmental Assessment Report on the Coastal Zone of Lebanon, Council for Development and Reconstruction (1997);
- Land cover mapping, Ministry of Agriculture and FAO.
- The biological Diversity of Lebanon, Ministry of Agriculture (1996);
- Information is available through concerned institutions and agencies. The only report available on Internet that could be of valuable importance for this sector is the http://www.agriculture.gov.lb/ biological diversity report. The Ministry of Tourism has a Web Site, but data are restricted to general service information (hotels, restaurants, etc.).

**Research and Technologies**

All technology-related issues need to be addressed. However they are not applied yet.
Very few hotels are applying the minimum requirements of environmental management systems. The application of such systems is totally voluntary.

**Financing**
Until now, sustainable tourism has not been subject to any national, regional or international financial assistance. Attempts have been made by local NGOs (such as the Association for Forest Development and Conservation) to obtain funds through the Short and Medium Action Programme (SMAP) allocated by the European Union, in order to promote sustainable tourism in the Mount Lebanon area. A final decision has not yet been obtained.

**Cooperation**
Many references have mentioned Cyprus as a model sustainable tourism destination that could be replicated in Lebanon. This is due to the good example of how rapidly the recovery of a damaged tourism industry can take place in a country: Planning controls on the development in Cyprus were weak at that time and investment in the sector was supported by financial incentives similar to those in Lebanon. European countries (mainly France, Italy, Greece and Spain) are also considered among model sustainable destinations due to their old experience in various aspects of tourism.

On the national level, the Mount Lebanon area could be considered as a model tourism destination for nature, historical and cultural aspects.

Lebanon has no co-operation programmes in the area of sustainable tourism.