

Republic of Lebanon

Office of the Minister of State for Administrative Reform

Center for Public Sector Projects and Studies

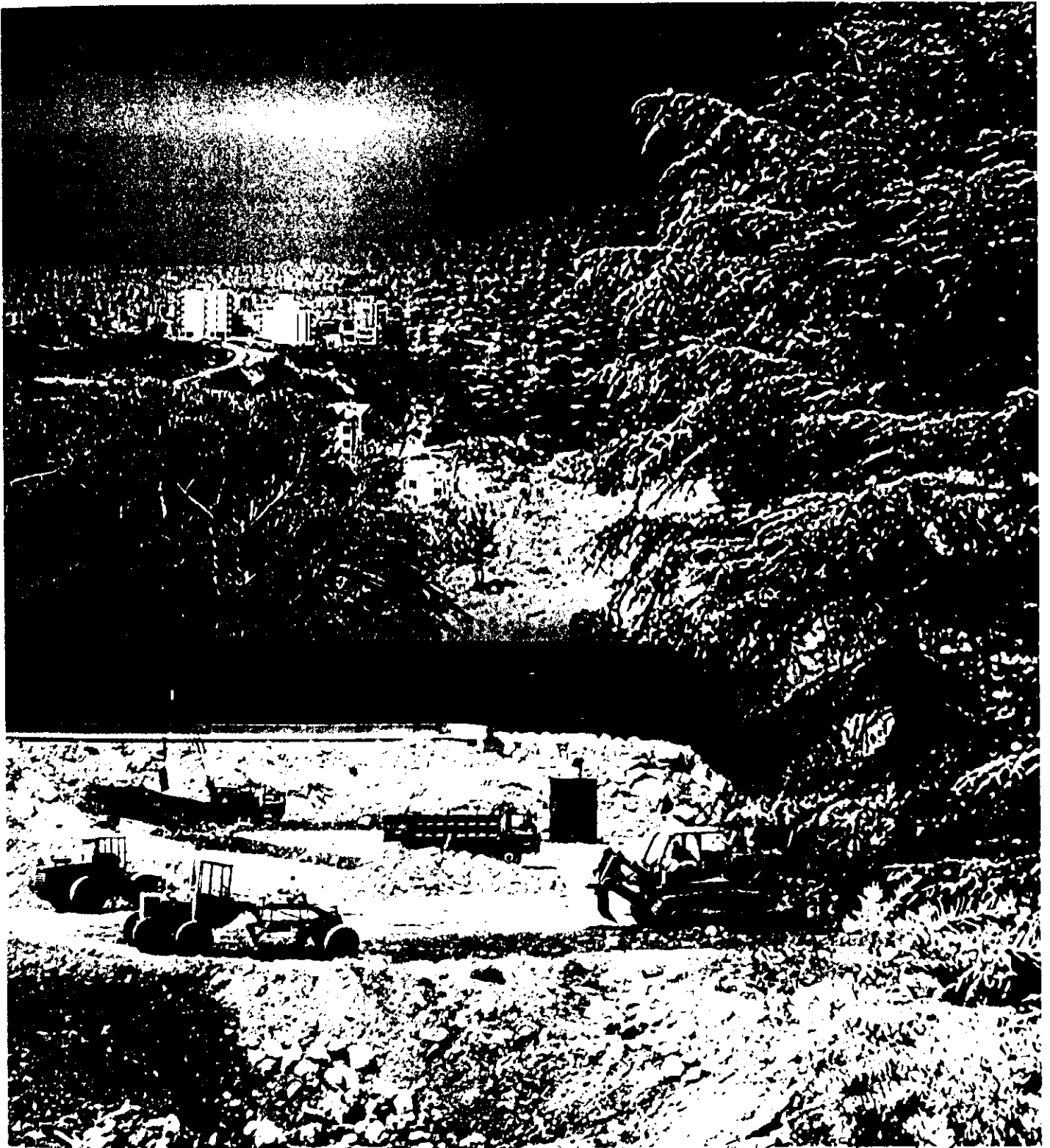
(C.P.S.P.S.)

Lebanese Republic



Ministry of Environment

# SUSTAINABLE DEVELOPMENT IN LEBANON



الجمهورية اللبنانية

مكتب وزير الدولة لشؤون التنمية الإدارية  
مركز مشاريع ودراسات القطاع العام



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**Lebanese Republic**  
Ministry of Environment

**SUSTAINABLE DEVELOPMENT  
IN LEBANON**

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United Nations Development Programme

July 1998



## *Preface*

*As we rebuild our nation, as we work to revitalize our economic, social and cultural capacities, it is essential to remember that we must build not only for today but, more importantly, for tomorrow. We can no longer afford the shortsighted extravagance of satisfying our immediate needs at the expense of depleting our resources. We cannot spend on the present without investing in the future.*



*In 1992, when the Earth Summit in Rio de Janeiro proclaimed the principle of sustainable human development as the master key to an enhanced future for humankind, we in Lebanon - perhaps more than any other country in the world - listened closely. We had just emerged from a long devastating war and were greatly in need of guidance in the reconstruction of our country. It was vitally important that we formulate a comprehensive policy of development that would take care of our urgent problems and at the same time serve as a sure compass in leading us and our children into a bright, secure and prosperous future.*

*Lebanon recognizes that it must energetically pursue sustainable development and the equitable balance it offers. Consider these facts: 86 percent of the Lebanese live in and around urban centers with a disturbing density of 1,610 people per square kilometer, while 14% live in impoverished rural areas at an average of 120 persons per square kilometer; only 7 percent of our land is forested; our air and waters are dangerously polluted; and 15% of our human losses (in deaths, disabilities and infant mortality) are caused by the deterioration and depletion of the environment.*

*Yet only 18.4% (???) of our national budget is allocated to alleviating the human, social and economic damage caused by so many past years of unbalanced development. This, in consequence, has resulted in a costly neglect and abuse of our environmental resources and produced the life-threatening*

*pollution we are experiencing. The deteriorated status of our environment demands comprehensive action. It calls for a serious alert based on an objective assessment of the facts, to be followed by the planning and implementation of an integrated program of environmental protection strategies rooted in the concept of sustainable human development.*

*In essence, the environment is the nucleus of our human existence and well-being and our primary challenge is to provide it with the capacity to renew its resources. Only in this way we can achieve sustainable development and reap the enduring benefits it offers to all.*

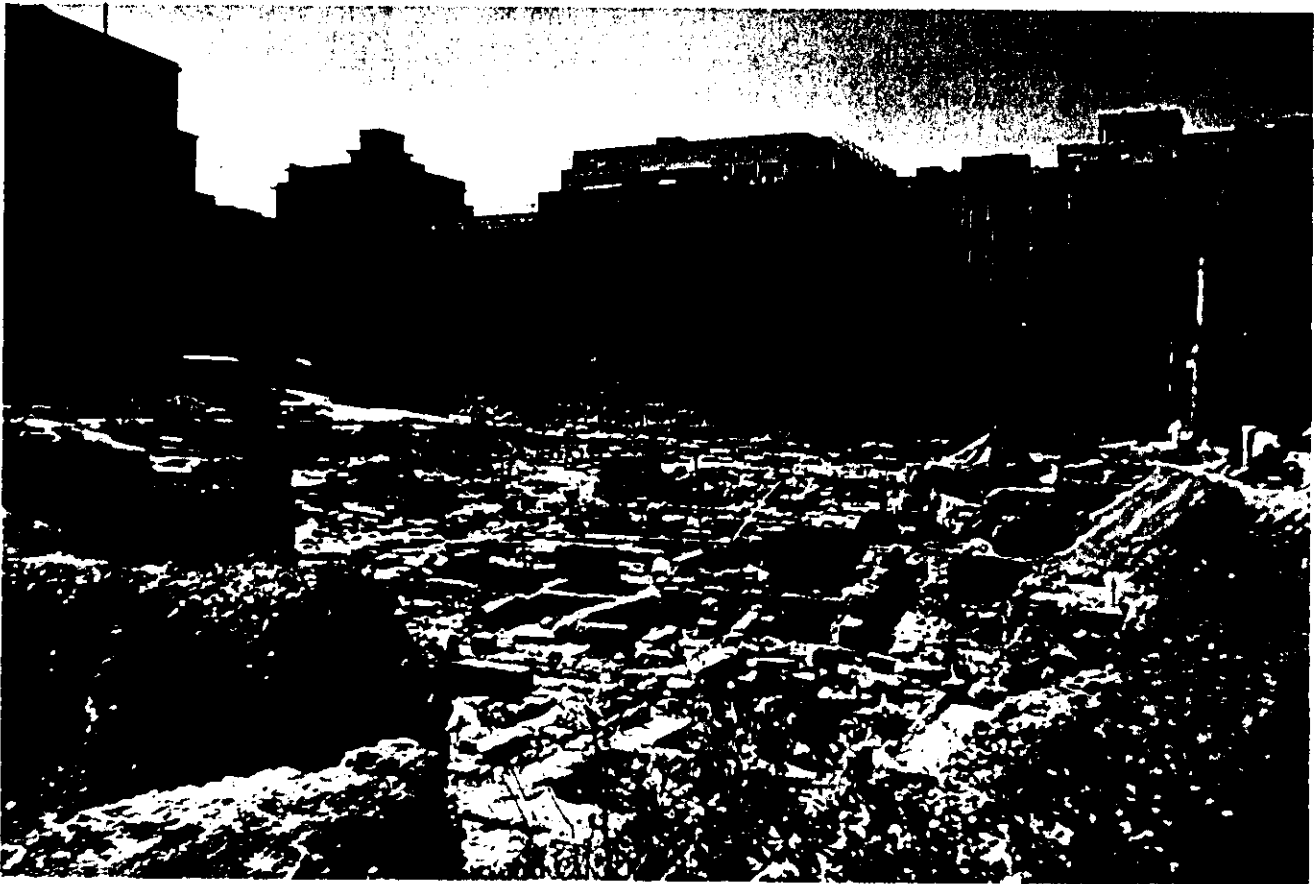
*This is our strategy, the perspective from which we approach our plans for reconstruction, reform and development. As government officials, we will do our best, but we also believe that the protection of the environment is the common responsibility of everyone - of every man, woman and child living in Lebanon who cares for its future and for a better life on this bountiful earth.*

**Akram Shehayeb**  
*Minister of Environment*

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## General review



Reconstruction of the Center of Beirut

### **Sustainable development, five years after Rio**

The Earth Summit, held in the summer of 1992 in Rio de Janeiro with a large international coordination, adopted the principle of sustainable human development. The primary



goal of the Summit was to find an equitable balance between the economic, social and environmental needs of present and future generations and to lay the foundation for a global partnership between developed and developing countries, as well as between governments and sectors of civil society based on common understanding of shared needs and interests.

At the Summit, 179 governments, including 108 heads of state or governments, adopted three major agreements to guide future work: Agenda 21, a global plan of action to promote sustainable development; the Rio Declaration on Environment and Development, a set of principles defining the rights and obligations of states; and a Statement of Forest Principles to guide more sustainable management of the world's forests. In addition, two legally binding conventions, one on Climate Change and the other on Biological Diversity, were opened for signature at the Earth Summit. At the same time, negotiations began on a convention on Combating Desertification, which was ratified in December 1995 and implemented in March 1996<sup>(1)</sup>.

The Rio Declaration states that the only way to assure long-term economic progress is to link it with environmental protection. Hence, development is no longer linked only to economic growth. In order to achieve sustainable development and to fulfill basic human needs, environmental protection must constitute an integral part of the development process and cannot be considered an isolated element.

This profile is intended to provide a general review of Lebanon's national progress since the Earth Summit. It highlights the contributions of the Ministry of Environment, as well as those of various government agencies, non-governmental organizations, private sector and other major groups in identifying and implementing the initiatives related to sustainable development - the process of meeting the needs of the present without compromising the capability of future generations in meeting their own needs.

Although Lebanon was a prosperous upper-middle-income country in the mid-seventies, twenty years of conflict and turmoil have severely damaged its productive resources. Major negative impacts of the war on the environment include the destruction of infrastructure, forest fires, land abandonment, degradation of terraced land, overpopulation on the coast, loss of fish breeding grounds, sea water intrusion due to over-consumption from private wells, dumping of solid waste in land and coastal waters, and coastal pollution from uncontrolled waste dumps and untreated effluent discharges.

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1-UN Earth Summit + 5, New York, June 1997.

Since the end of 1992, the Lebanese government has been dealing with the extraordinary task of reconstructing the country, guided by a general framework (Agenda 21) for implementing sustainable development through reconstruction, administrative reform and human development. Its initial activities were based on the National Emergency Reconstruction Project (NERP), a five-year rehabilitation plan (1993-97) concentrating on water, wastewater, solid waste, electricity, telecommunications, transportation, education, health and technical assistance. In 1995, the government submitted to the Parliament a ten-year plan referred to as Horizon 2000, which covered in addition to the physical infrastructure sectors, the social infrastructure and private sectors. Through its three-year National Administrative Rehabilitation Project (NARP), the government's aim was to address the urgent needs of the various administrative units and rehabilitate them to a level of basic functionality that could deal with the operations of any public entity.

The National Administrative Rehabilitation Project was prepared for execution by the Ministry of Administrative Reform, with major support from the United Nations Development Program (UNDP).

Major environmental investment has been also taking place. In 1995-1996, the Horizon 2000 program totalled US\$1,300 million<sup>(2)</sup>, covering water supply, irrigation, wastewater and solid waste management. The impact of public expenditure programs on the infrastructure in water supply, sanitation, solid waste and power is likely to benefit the environment, particularly in terms of human health, and current government policies recognize the need to introduce full cost recovery for environmental services. Most of the projects that are funded by international organizations or foreign countries undergo environmental impact assessment so as to mitigate the various negative effects on the environment, such as the sanitary landfills project, which is supported by World Bank and where impact assessment has been made for each landfill in the different districts of Lebanon.

Although economic growth remains the central objective of the government, since mid-1997 an important shift of policy towards the social and other aspects of development has occurred. The Lebanese government is "now seeking to better align itself towards achieving the objectives of sustainable and human development."<sup>(3)</sup>

The Ministry of Environment was created by Law 216 of 2 April 1993 as the government institution responsible for the development of a national strategy for

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2- Council for Development and Reconstruction, Progress Report 1996.

3- Ross Mountain, United Nations Resident Representative - UNDP, Lebanon Development Cooperation 1997 Report.

sustainable development. However, this did not receive priority on the program of the relatively young Ministry during its first four years. Instead, the Ministry had to deal with urgent environmental problems such as uncontrolled quarrying, sand withdrawal activities, municipal and industrial solid waste disposal, hazardous waste, bird hunting and environmental awareness. Nevertheless, MoE has almost completed an Environment Strategy Framework, which has yet to be approved, and major achievements were realized, including the ratification of many conventions such as Climate Changes, Biodiversity and Combating Desertification, which were put into action through several related projects.

The government's projects are internationally supported through different UN agencies, the World Bank (WB), the Global Environment Facility (GEF), as well as by several countries. A number of other government organizations have responsibilities for environmental management in Lebanon, in particular the Council for Development and Reconstruction (CDR), which is leading the recovery and reconstruction program in the country. Although the overlapping responsibilities of the different ministries restrain the implementation of environmental measures, the CDR is nevertheless playing a major role in coordinating the work of the various government institutions.

Sustainable development is achieved by "people themselves" and not only "for them." The people must participate fully in the decisions and processes that



A sculpture by the Lebanese artist Adel Al-Saghir has witnessed the years of war and survived - Beirut Center

shape their lives. In Lebanon a number of associations and federations grouping individual organizations were created in the early 90s and have since been working to strengthen their capacities. Their goal is to pursue the common interests of their members, to mobilize resources and to lobby with government and other development partners. There are many dedicated environmental groups and Lebanon has witnessed the establishment of environment clubs at schools and universities, as well as national environment days and reforestation campaigns. Moreover, environmental concerns are becoming part of daily life, an attitude that previously did not exist in Lebanon. The private sector is becoming increasingly involved in environmental awareness. Academia and centers of research are working on environmental issues. Women are increasingly participating in environmental awareness and training. At the same time, the role of local authorities in sustainable development remains limited, due to stagnation of the municipal electoral process - only two municipal elections prior to 1963 and after that a long void until the recent municipal election of May-June 1998. Some municipalities in rural and urban areas, however, played a great role in tackling the daily problems resulting from environmental degradation. During the war years, several municipalities organized waste collection and treatment management programs and are now coordinating with local NGOs and CBOs to solve environmental problems.



Preservation of archeological sites and cultural heritage - Beirut Center, 1997

### Profile of human development in Lebanon<sup>(4)</sup>

Population in Lebanon		3,000,000
Urban population %	93-94	86
Rural population %	1994	14
In Mount Lebanon %		36.8
In North Lebanon %		21.6
In Beirut %		13.1
Annual rate of increase %		23
Highest density (the coast)	1993	1610 p\km <sup>2</sup>
Lowest density (Bekaa area)		120 p\km <sup>2</sup>
Life expectancy at birth (years)		68.7
Population with access to:		
Sanitation %	1990-1995	63
Daily calories per capita	1992	3.319
Adult literacy (15 +)%	1993	91.7
Combined first-, second- and third-level gross enrollment ratio %	1993	74
Illiteracy %		13.6
Illiteracy among females %		17.8
Illiteracy among males:%		9.2
Daily newspapers (copies per 100 people)	1992	18
Televisions (per 100 people)	1992	32
Expenditure on community and social services (% of the budget)	1997	18.4
services (% of the budget)		
Expenditure on Agriculture (% of the budget)	1997	0.4
Importation of food needs %		80

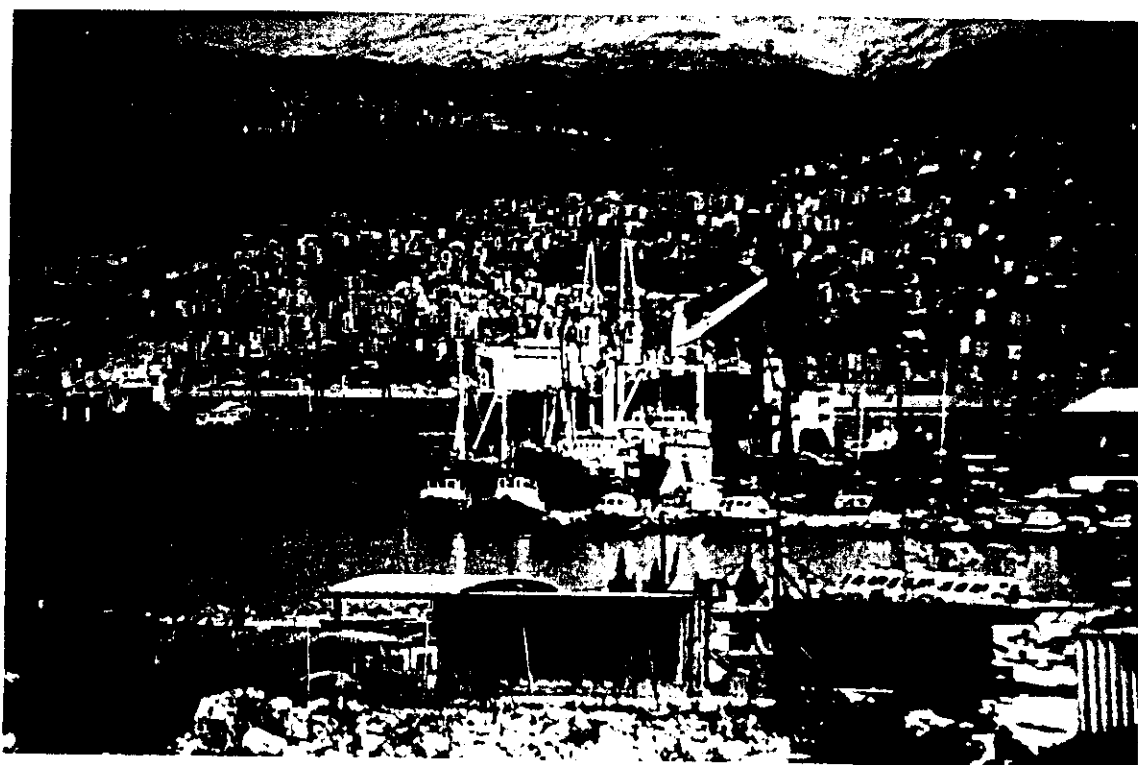
4- UNDP, Lebanon Development Cooperation, 1996 and 1997 Reports.

## **I Main economic and social factors**

### **A Economic factors**

This section briefly reviews selected aspects of sustainable development in Lebanon. It covers government reconstruction and rehabilitation projects, as well as the development of other factors related to basic services and resources.

Since 1992, the goal of the government has been to restore public services and stimulate private sector economic activity. Lebanon has always thrived on free enterprise and the government's plans were aimed at supplying an appropriate infrastructure, in the broadest sense, to enable the country to economically compete regionally and globally. In addition to providing the physical infrastructure, there was the need to create economic stability and establish an appropriate fiscal environment. External assistance, on bilateral and multi-lateral bases, is playing a major role in the reconstruction and economic development of the country and involves the participation of more than 20 countries.



Beirut Port, 1997

## 1 Horizon 2000: Reconstruction, rehabilitation, and recovery

In 1992, the Council for Development and Reconstruction prepared and launched the National Emergency Reconstruction Program, a US\$2.25 billion scheme aimed at restoring basic infrastructure services, such as electricity and telecommunications. The program was essential for the proper functioning of the private sector, which would then be mobilized into increased economic activity and lead to an increase in gross domestic product.

The first phase of rehabilitation has been completed and some major benefits are already being experienced: reliable electricity services are being provided to most users; telecommunication systems are functioning better; and some 1,200 public schools have been rehabilitated. Garbage collection in Beirut has been in place for five years and this is gradually being extended to other regions. Renewing roads and expanding services in the northern and southern suburbs of Beirut is also under way.<sup>(5)</sup>

In the second phase of work (Horizon 2000) further attention is being given to both the physical and social infrastructures - in the education, health, water

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5- Council for Development and Reconstruction, Progress Report 1996.

supply, wastewater and solid waste sectors. Work is progressing in the rehabilitation and re-building of educational facilities. The government has also embarked on construction of a number of major projects, such as new power generating facilities and several new hospitals, including the Beirut University Hospital, as well as the Beirut International Airport, rehabilitation of Beirut Port, expansion of the Lebanese University and several urgently needed road projects. The National Administrative Rehabilitation Project, launched by the government, aims at eliminating corruption, building stronger efficiency within the civil service capacity to carry out its responsibilities professionally, as well as securing a greater separation between political and administrative functions.

## 2 Economic development

The government's economic strategy before the war emphasized trade, financial services and tourism. The agricultural sector was not a priority. This led to the internal emigration of people from rural areas to the coastal line, especially to big cities (Beirut, Saida and Tripoli). Between 1991-1996 the national governments focused also on the reconstruction of the destroyed infrastructure in both coastal and rural areas, with reconstruction in rural areas focusing mainly on roads, electricity and communications. Agriculture, however, did not receive enough attention, nor did the creation of integrated economic frameworks that would enable rural people to work and stay in their areas.



Emissions from a power - generating plant in Kesrwan



Since taking office in November 1996, the present government's policy has taken into consideration the priorities concerned with socio-economic development. These priorities include:

- A socio-economic policy designed to achieve balanced development. The government has targeted the three main areas of industry, agriculture and tourism and also aims to support the state's housing policy, hospitals, education and the public transportation network.
- Administrative reforms to free the administration from political influences, enhance administrative decentralization and reactivate the role of municipalities.
- The return and reintegration of the displaced.
- The enforcement of environmental laws, proposal of new legislation and finding solutions to the problems of waste, waste dumps and quarries.<sup>(6)</sup>

These priorities have been translated into action through implementation of the projects and policies which are highlighted in this report.

Towards the end of 1997, concern emerged over the worsening public financial situation. Some experts suggested a new financial policy based on increasing expenditures to reactivate the productive sector and to improve the efficiency of all public services. They called for a reorganization of priorities to ensure the essential needs of the majority of citizens were met. To secure more revenues, the government decided in 1997 to impose taxes on luxury items in general.

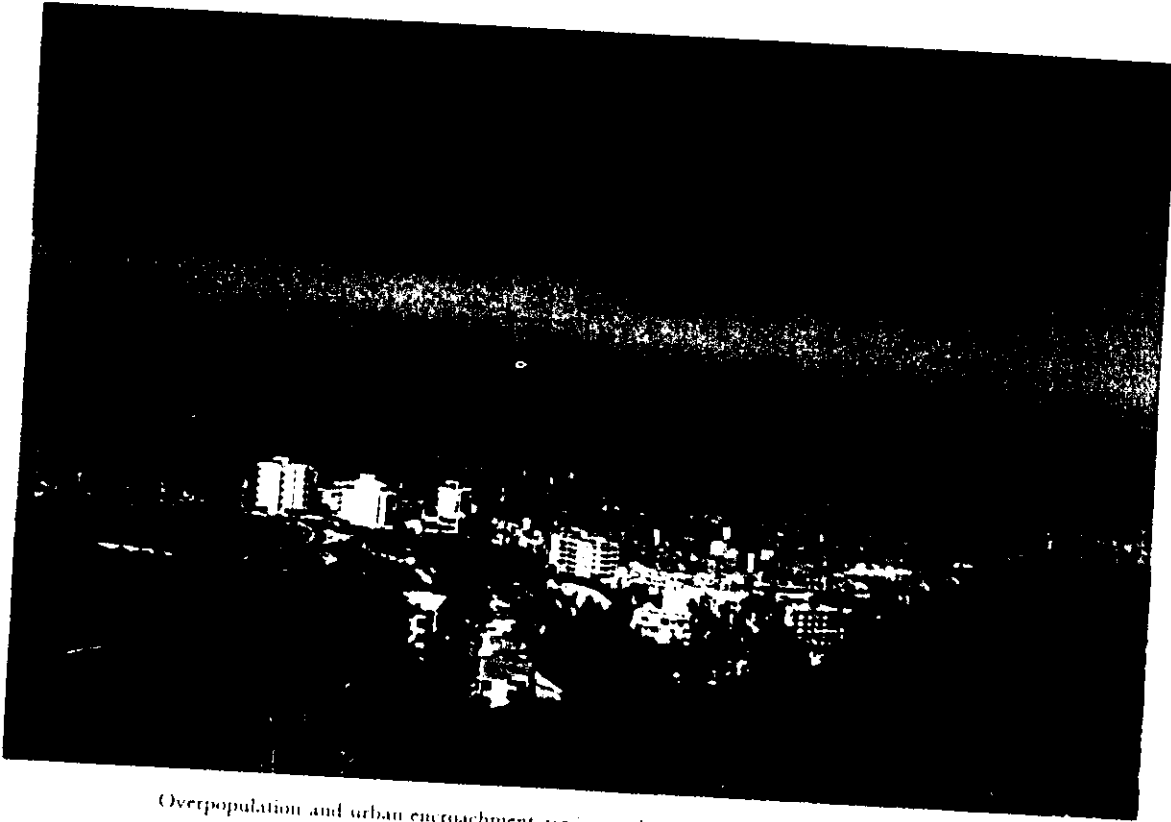
An improved framework and mechanism for private sector development is high on the government agenda. The Lebanese Investment Development Authority (IDAL) at the sector-level and the Central Bank with respect to the financial market have taken important initiatives and developed considerable activities during the last three years. The banking sector, meanwhile, is expected to play an increasingly important role in reconstruction, development and housing.

Regional cooperation is progressing, with an emphasis on economic cooperation mainly with Syria. The Arab League decided to establish within a period of ten years (as of 1998) an Arab free-trade zone, and Lebanon has contributed to this initiative by drawing up a blueprint for the creation of an Arab common market.

Several components of economic development still have a long way to go. In the agricultural sector, the Ministry of Agriculture is undertaking short and medium term strategies to prepare an integrated national program. In industry, slight progress has been witnessed, despite the lack of adequate financing. Now consisting of 23,518 industrial enterprises, the sector is expanding - 459 new

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6- UNDP, Lebanon Development Cooperation, 1997 Report.



Overpopulation and urban encroachment are in continuous increase - Greater Beirut Area

enterprises were established in 1996.<sup>(7)</sup> The United Nations Industrial Development Organization (UNIDO) revealed in mid-1997 a country support strategy for development of the industrial sector. And the creation of an independent Ministry of Industry in mid-1997 (after its separation from the Ministry of Petroleum) reflected the government's desire to develop and implement a coherent strategy for the industrial sector. Favorable developments in the trade and tourism sectors were also experienced during the past four years. Rehabilitation work on the hotels started and new hotels were constructed, mainly in the coastal zone of Greater Beirut area and Kesrwan.

Experts in sustainable development strongly recommend that the immediate demand for development and reconstruction be balanced with the need, after so many years of war and abuse, to rehabilitate and enhance, as well as maintain and monitor, the functions of the ecosystem and the human environment. Achievement of this task will depend on the approval and implementation of a national environmental strategy by different governmental agencies, local community groups and non-governmental organizations.

7- UNDP, Lebanon Development Cooperation, 1997 Report.

### 3 The Friends of Lebanon Conference

On 16 December 1996, the United States of America organized in Washington D.C. The Friends of Lebanon Conference, in support of the reconstruction of Lebanon. The Conference was attended by 29 countries and 8 international organizations. With the view of securing international assistance, the Lebanese government presented 31 projects covering infrastructure needs in several sectors. The following box outlines projects and their cost.

Programmes and projects <sup>(8)</sup>	Amount (US\$ million)
<b>Basic infrastructure</b>	<b>1,350</b>
Power sector pollution reduction	100
Road rehabilitation and development program	1,250
<b>Social Infrastructure</b>	<b>1,080</b>
Vocational and technical education expansion	300
Lebanese University campus	400
Primary health care expansion	130
Hospital rehabilitation	20
New hospital equipment	60
Low-cost housing program	150
<b>Dams and water transport</b>	<b>520</b>
Bisri dam	150
Irrigation dams	155
Hill lakes	60
Awali-Beirut water conveyor	155
<b>Water supply</b>	<b>670</b>
NERP water supply rehabilitation and extension	540
Anane basin	130
<b>Wastewater and environmental protection</b>	<b>735</b>
Mediterranean coastal protection	400
Industrial pollution control	30
Inland water resources protection	305
<b>Industrial infrastructure</b>	<b>45</b>
Pilot industrial estate	45
<b>Agricultural infrastructure and irrigation</b>	<b>400</b>
Agricultural roads	30
Reforestation	10
Agriculture schools and research centers rehabilitation	5
Agricultural land reclamation	75
Agricultural credit	95
South Lebanon irrigation	70
Assi irrigation	65
Baalbeck-Hermel integrated rural development (alternate crops)	50
<b>Public facilities and institutions</b>	<b>200</b>
Internal Security Forces center	65
Slaughter houses	35
Juvenile rehabilitation centers, war-related stress hospital and centers	60
Rehabilitation and construction of prisons	40
<b>Total</b>	<b>5,000</b>

8- Government of Lebanon, Lebanon Recovering from the Past, Building for the Future, Friends of Lebanon Conference, 16 December 1996, Washington D.C., October 1996, 42 pages.

The participating donors in the Conference have undertaken to help Lebanon financially up to 1 billion US\$, but implementation of the financial intentions has been slow.

#### 4 **Changing consumption patterns**

According to a World Bank survey, 15% of human loss (death, permanent disabilities, infant mortality) is due to environmental reasons such as pollution, water contamination and vehicle accidents. The cost of social loss caused by environmental degradation (water, wastewater and sewerage) equals approximately \$300 million.

The major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in the industrialized countries. It is necessary to examine the demand for natural resources generated by unsustainable consumption and seek ways of using resources in a manner that will minimize depletion and reduce pollution. Causes and consequences of poverty are interrelated. They both reflect the absence of sustainable development strategy. Patterns of consumption are quietly affected by poverty, and vice-versa. Poverty in Lebanese rural areas led people to move from agricultural economic system to real estate speculation. They emigrated from their villages and settled on the coast, causing overpopulation which has had a grave impact on the environment.

There is still not an integrated policy for changing consumption patterns in Lebanon. Nevertheless, certain ministerial initiatives have established some regulations and restrictions. The Ministry of Economy and Trade has applied measurements on imported commodities to agree with the international quality standards of production. A study on trade and environment has been initiated by the Ministry of Environment and Capacity 21 to assess the impact on the environment expected to result from the free trade zone in the Mediterranean, foreseen to be established by the year 2010 within the context of a Euro-Mediterranean partnership. The study will include a case study on environment and trade policies in Lebanon. The Ministry of Environment has prohibited the unauthorized importation of chemicals and set up precise conditions and measurements for the establishment of new industries. Fourteen additional Lebanese construction standards have been approved to comply with environmental protection measurements. Quarrying activities are being organized through the National Master Plan for Quarries, which was approved by the Cabinet in 1997. The Ministry of Agriculture initiated and is imposing fines on cutting trees and overgrazing, with violation of this law leading to possible imprisonment.

Initiatives to build public environmental awareness are increasing, with major support from the Ministry of Environment and through non-govern-

mental organizations, mass media, and schools. In coordination with the private sector, clean technology projects and public awareness of recycling are increasing. Campaigns for collecting paper from schools to be recycled are taking place. The private sector is increasingly participating in these initiatives and a few industries have started recycling glass, paper, metal and plastics. In September 1996, the Ministry enacted environmental regulations that include a mix of emission and ambient quality standards for air, water (potable, wastewater and swimming) and noise pollution, as well as for industrial emissions. These standards, however, are difficult to enforce because of the fragmented and small-scale nature of industry and the lack of institutional capacity.

Public transport has improved, even though the pollution problems caused by vehicle emissions due to the use of leaded fuel have not been resolved and continue to expose the population to severe health risks. A study undertaken by the American University of Beirut recommended that the amount of lead in imported fuel be reduced by at least 50%. The Ministry of Environment has requested the Cabinet to withdraw the decree permitting the import of diesel motors. The installation of filters on some cement factories has taken place (Chekka area), and some factories have been equipped to phase out the CFC11 and CFC12 produced by Lebanese industry.<sup>(9)</sup>

The Government has set certain objectives concerning change in consumption patterns, such as establishing progressive import taxes on cars, with rates varying from 20 to 200 percent. The Government is also attempting to improve the coverage and efficiency of tax collection, mainly on energy bills, where it was revealed in mid-December 1996 that 44 % of energy bills remains unpaid<sup>(10)</sup>. Electricity rates increased and so did communication and water rates. The electricity sector aims to establish gas turbines and some hydro-electric turbines and to install filters on more existing power stations. A government policy of applying full cost recovery on environmental services (electricity, fuel, water) may change consumption patterns. However, time will be needed before the impact of this policy can be assessed.

In its review of the problems of energy and environment, the "Association Libanaise pour la Maitrise de l'Energie" (ALME) indicated certain measures to be taken to fight energy pollution of fuel consumption by creating a "polluter pays policy" (PPP) and adopting an energy control policy. Other concerned non-governmental organizations have conducted studies and research on air and noise pollution.

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9- Council for Development and Reconstruction, Progress Report Update, 1997.

10- UNDP, Lebanon Development Cooperation, 1997 Report.



Getting water in an underserved rural area. Wadi Khaled - Akkar - North Lebanon

## **B** Social factors

Internal emigration from rural areas to the coast and big cities began many years before the Lebanese war, mainly due to poverty and lack of an integrated governmental policy for sustainable development in the rural areas. Governmental policies have tended to indirectly encourage real estate construction, which has put additional strains on access to clean water, air and sanitary networks. The war painfully affected social cohesion and led to severe demographic changes in the country, in which thousands of families were displaced and sought dwelling in big cities, thus increasing overpopulation and poverty. Since the early stages of Horizon 2000, an in-depth discussion has emerged on the social context of the reconstruction policy in Lebanon and its impact on social dimensions. It is probable needless to say, that reconstruction of the infrastructure will lead in one way or another to economic growth and development. But this question may arise: Can the social problems be solved and poverty be alleviated simply through the reconstruction process and economic growth, or will these problems demand an appropriate independent policy that will lead the government to revise its strategies of reconstruction and give more attention to human resources and training rehabilitation? Sustainable development can not be implemented only through decisions, mechanisms and net economic policies, but must start with people themselves. Sustainable develop-

ment means the participation of major groups in decision-making and identification of projects, thus adding human resources and expertise to the physical and monetary capital.

## 1 Demographic dynamics

Between 1994-1996, a large survey of 70.000-people was conducted by the Ministry of Social Affairs in cooperation with the United Nations Population Fund (UNFPA). This Population and Housing Survey made available, for the first time in more than fifty years, data on population and development in the country. Announced by the Prime Minister on 15 October 1996, the survey looked at population distribution characteristics based on indicators such as economic, education, marriage and gender, among others. Its results indicated that Lebanon doesn't suffer from dramatic growth of population nor from a high rate of infant mortality or illiteracy. Instead, Lebanon suffers from over-population on the coast, mainly in the Greater Beirut Area, which increased poverty and had a grave impact on the environment, such as in the overuse of land resources and the pollution of air, water and soil. The survey showed that nine out of ten people reside in urban areas, compared to 60% in 1970. Although the median number of persons per km<sup>2</sup> of land is not high (244) by international standards, the population density in some quarters of Beirut exceeds 25,000 persons per km<sup>2</sup>.<sup>(11)</sup>

## 2 Combating poverty

*"Poverty is not to be suffered in silence by the poor. Nor can it be tolerated by those with the power to change it. The challenge now is to mobilize action – state by state, organization by organization, individual by individual". (James Gustave Speth, 1997)*

If human development is about increasing people's choices, the condition of poverty – from the human development perspective – means denial of basic opportunities and choices for living a tolerable life. Poverty can not be alleviated solely by economic criteria, but also calls for social and human development.<sup>(12)</sup> There are no recent official and precise studies on poverty in Lebanon – some studies made during and after the war depended on surveys and statistics compiled in the seventies. The hyperinflation that occurred between 1984-1991 and the decline in the monetary value of the Lebanese pound had a great negative impact on the social and economic status of the population, causing a

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11- UNDP, Lebanon Development Cooperation, 1997 Report.

12- UNDP, Lebanon Development Cooperation, 1997 Report.

dramatic gap between income level and cost of living. This gap did not decrease after the war and is one of the major cause of poverty in the country.

Since 1992, the economic and social policies of the government have focussed on reducing the effects of poverty rather than on tackling its causes. These policies were based on increasing wages, stabilizing national currency and limiting hyper-inflation, as well as on the use of indirect taxation on selected goods and a reduction of the income tax to a flat 10% rate. But this approach has had little effect on improving the conditions of the poor and the social situation in the country continues to be very difficult. The unemployment level at present is estimated to be between 12% and 14%.<sup>(13)</sup> According to the trade unions, salaries in 1995 ought to have increased by 90% to recover the level of the early 1990s.

In the second quarter of 1997, political attention turned to underserved areas, particularly in Akkar (North Lebanon) and the Baalbeck-Hermel districts (Bekaa), in response to demands of the local population. These areas are generally believed to suffer a high incidence of poverty and are in urgent need of emergency rehabilitation programs. On 22 June 1997, the Bekaa members of Parliament called for administrative decentralization to enable the municipalities to play their role in developing the region. On 27 June, the Government decided to allocate LL 150 billion to the Baalbeck-Hermel region, mainly for irrigation and wastewater projects and construction of a dam and a reservoir.<sup>(14)</sup> This program is expected to provide the basis for development and create employment opportunities. It will also integrate women into the local economy through training and support for small-scale economic activities.

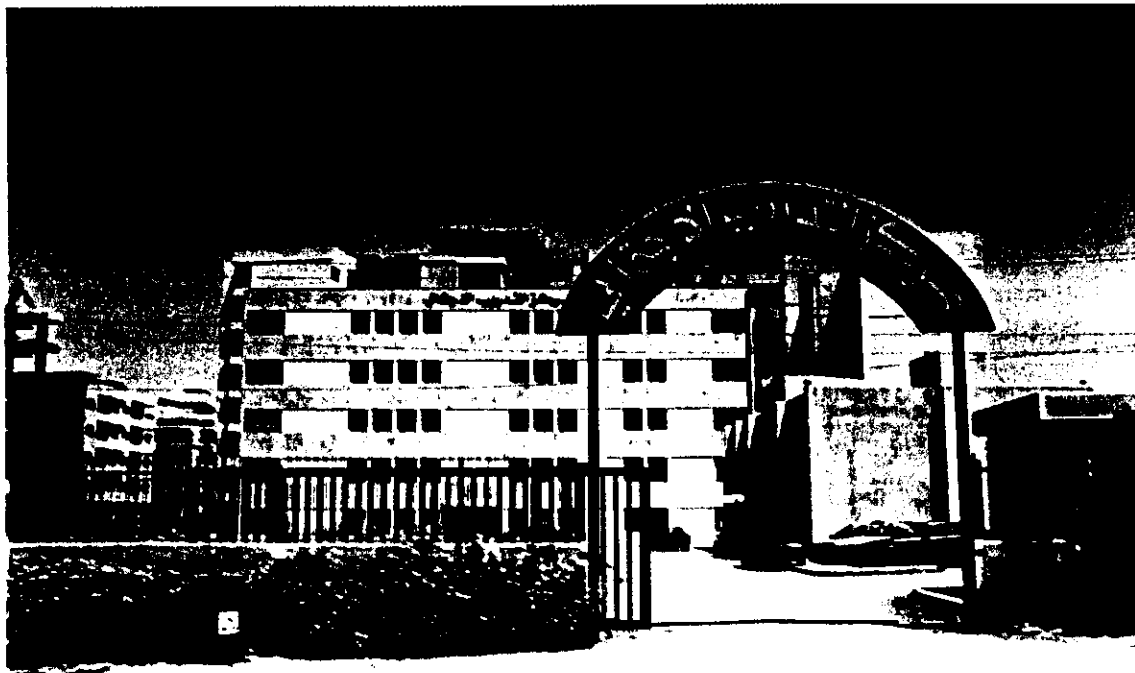
Several projects under way in rural and peripheral areas are being executed by different ministries with the collaboration of UN agencies and other international organizations. These projects aim at creating economic bases for local community groups that will encourage them to remain in their areas of origin. Two such projects are the Integrated Project of Baalbeck- Hermel, undertaken by the Ministry of Agriculture; and the Return of the Displaced and the Creation of Economic Projects for them, undertaken by the Ministry of Displaced. In 1997, the Council of Ministers approved a plan for social development estimated at US\$1 one billion, from which US\$400 million will be earmarked to develop impoverished rural areas such as Baalbeck-Hermel and Akkar.

Rehabilitation programs and reform of public services in the social sectors were continued during the past three years. In 1996, the private sector - namely a small number of commercial banks - launched, with the support of external financing, a loan program for the middle class population. And the Housing

13- UNDP, Profile of Sustainable Human Development, 1996 Report.

14- UNDP, Lebanon Development Cooperation, 1997 Report.





The Social Development Training Center - Southern part of Beirut

Bank was reactivated under private sector management to offer individuals housing mortgages up to \$30,000.

## 2.1 Social services

In February 1997, at the request of the Ministry of Social Affairs, UNDP fielded a mission to propose a framework for a national definition of poverty and poverty measurement. The mission report was submitted in May 1997.<sup>(15)</sup>

The Ministry of Social Affairs in 1993 began reactivating its social services centers in all regions of the country under an approach of decentralization of its activities to city, town and village quarters and an accompanying promotion of community participation. In its Social Development Training Center, the Ministry is now training 52 young persons to become auxiliary social workers. Mainly women (84%)<sup>(16)</sup>, these workers will benefit from the training programs to develop their skills in social service. In March 1997, a mission was launched within the context of a Sustainable Human Development Network activity,

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15 - Council for Development and Reconstruction , Progress Report Update 1997.

16- An interview with Hoda Hammoud Sleiman (technical trainer) - the Social Development Training Center.

which aimed at reviewing the mandate, role, responsibilities and human resources of the Ministry of Social Affairs, and assessing the major aspects of current national social policy. The Ministry plays a central role in terms of providing social and welfare services. It provides coordinated action and support to the handicapped, both those of the war period and otherwise. A comprehensive programme of support would greatly benefit the Ministry and its network of integrated social services.

### 3 Education

Education is the basis for the creation of a competent and productive society. In January 1996, The Educational Center for Research and Development (ERDC) launched in January 1996 the reform of national education programs, based on the newly decreed structure of the educational system. The objectives of the reform of school programs aimed at developing human potential and social capital in order to reduce poverty. In compliance with the Convention of the Rights of the Child, The Lebanese Parliament approved an increase to 14 years as of the minimum age for labor, thus opening the way for implementation of compulsory and free basic education in the near



«The House of Environemnt in Metn area, built by «LINE»

future<sup>(17)</sup>. In the second half of March 1997, the Educational Center for Research and Development (ECRD) submitted to the Government draft school programs, which will be gradually introduced into the educational system. In addition, the Ministry of National Education, and ECRD, in collaboration with the World Bank and UNESCO, organized in 1997 the first National Conference on "Restructuring and Development of the Education Sector", with the goal of initiating a dialogue among all parties concerned with the education.<sup>(18)</sup>

Supported by UNESCO, the Ministry of Culture and Higher Education is undertaking a project for the protection of natural sites and monuments. The initiative of the Government to establish higher vocational and technical education facilities (technology universities and institutes) – the first one of which was established in Saida, (south of Lebanon) – is a positive step towards sustainable development by creating more opportunities for finding employment, thus alleviating poverty.

#### 4 Health

The Ministry of Public Health, (MoPH) (whose budget averages 4-6 % of the total national budget) is working with the support of the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and the World Bank on introducing primary health care within the National Health System to the entire population. The National Health System provides every Lebanese with free hospitalization up to 85% of cost subsidy and conducts vaccination campaigns. In September 1996, The Ministry of Public Health launched the first stage of a programme of cooperation between the Ministry and 16 national and international NGOs, involving the establishment of 30 primary health centers, 20 managed by NGOs and 10 by the public sector. Among the several initiatives taken by the Ministry is the formation of a National Committee concerned with health and security at home, at work and on the road. It was created early in 1996 to provide information to the public and to promote a sense of security through media campaigns and other initiatives.

The Primary Health Care Program which is executed by the Ministry of Public Health covers rehabilitation, organization and management, as well as, new equipment for public hospitals and health centers. Construction of several hospitals and health centers is underway in rural areas, mainly the Akkar (North) and Bekaa areas, and tender documents have been completed for the rehabilitation of six hospitals and 30 health centers under a project financed by

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17- UNDP, Lebanon Development Cooperation, 1997 Report.

18- UNDP, Lebanon Development Cooperation, 1997 Report.

the World Bank.<sup>(19)</sup> The Central Laboratory of the Ministry of Public Health, meanwhile, has largely improved its role in the scientific monitoring and control of local and imported nutritional products (meat, canned foods, etc). And the Ministry of Health is working with the Ministry of Technical and Vocational Education in setting up training programs for health inspectors.

Preventive programs addressed by the Ministry of Public Health cover the very basic diseases, such as measles and polio. Health problems derived from polluting sources such as motor vehicles, power plants, industrial points and ground water contamination, are still tackled through ad-hoc planning. A legitimate assessment of the current situation cannot be presented due to the lack of field monitoring of source, and the absence of health registries documenting the true scope of related causes and effects.

Health services in Lebanon that provide curative care are marked by an oversupply of hospital beds and a serious shortage of nurses.

Beside the shortage of nurses, health care coverage is a major problem to be urgently addressed by the Government. Medical insurance coverage is available to only less than half the population, and it appears particularly problematic in the remote regions.<sup>(20)</sup> Private sector hospitals assume for 95% of health care in Lebanon and have an oversupply of services. Most top quality specialized health care, is concentrated in and around Beirut. Government hospitals suffer from lack of equipment, human resources quality, and funding. There are 760 local clinics, 80% of which are run by non-government and community-based organizations.

## 5 Displacement and resettlement

The series of conflicts that broke out in Lebanon in 1975 lasted nearly seventeen years, causing massive destruction that included extensive damage to houses, physical and social infrastructures and, economic and educational institutions. In addition, more than 100,000 non-combatant civilians were killed with more than twice the amount were wounded, handicapped, and left homeless, orphaned, widowed and/or unemployed.

After the permanent cease-fire in November 1990, the results of the long war became painfully clear: 90,000 families had been displaced, with an average of 5.7 persons in each family. The wide displacement had a severe environmental impact on demography, the economy, and the social coherence of the community groups. It brought on an imbalance in population distribution, in which the displaced flooded into urban areas, causing overpopulation in cities and leaving many rural areas totally empty.

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19- Council for Development and Reconstruction , Progress Report Update 1997.

20- UNDP, Lebanon Development Cooperation ,1996 Report.

Besides, agriculture had been the primary income-generating sector for the people displaced from rural areas - 55% were farmers, while women working on the farms represented 87% of all rural working women.<sup>(21)</sup> Consequently, a large number of people lost their source of livelihood, causing poverty and immigration. This has led to the degradation of agricultural lands, productivity, and forests. Moreover, families and communities previously settled in geographically and religiously defined areas have been scattered, causing a serious break-down in their critical social support network.

### 5.1 The Ministry of Displaced (MoD)

Created in 1992 the Ministry of Displaced, was the first governmental initiative towards social cohesion and reintegration. Its purpose is to preserve the rights of citizens, to grant and guarantee the protection in the return of the displaced to their homes, according to all relevant national and international laws. It is designated to initiate a successful process of return and reintegration of the displaced in their villages and towns of origin.

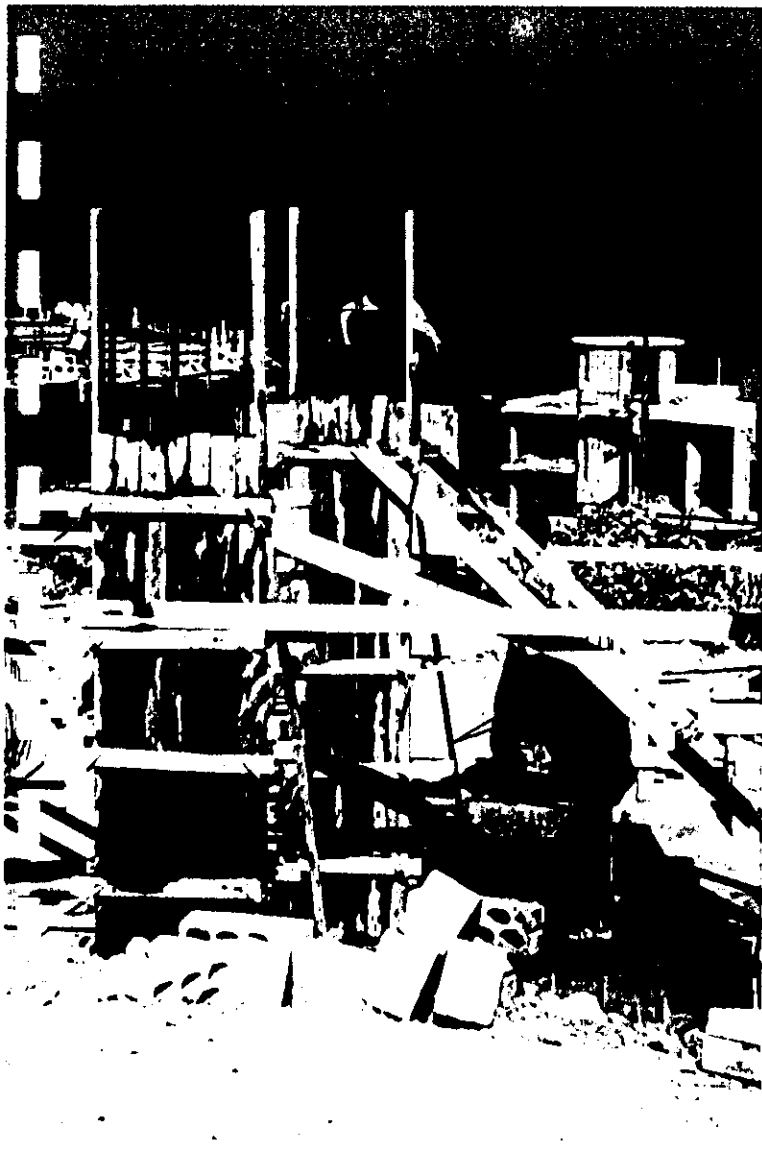
The Central Fund for the Displaced was established to fund and rehabilitate



A woman returning to a previous war zone in Mount Lebanon (Shouf caza)

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21-Ministry of Displaced, Return of the Displaced in Lebanon, 1996 Report.



Reconstruction of Al-Damour town in Shouf caza

end of 1996, a sum of US\$ 462 million had been disbursed, of which more than half was spent on evacuation of premises. According to the Ministry of Displaced, 28% of displaced families had returned to the Chouf, Aley and Baabda districts.<sup>(22)</sup> Return needs are not limited to vacating houses, but call for the rebuilding of economical, educational and health networks needed to be rebuilt in the former war zones in order to make the return permanent. A sum of US\$320 million dollars is needed for these projects.<sup>(23)</sup>

the local infrastructure networks of the areas of displacement. The Ministry of Displaced coordinates rehabilitation of the social sectors, and reactivation of economic activity through the United Nations Development Programme (UNDP) Project of «Reintegration for the Socio-economic Rehabilitation of the Displaced». In this respect, there has been an increasing level of participation by non-government organizations working in close cooperation with the Ministry of Displaced. The priority of the Government has been physical reconstruction, be it infrastructure or housing, in addition to the evacuation of illegally occupied buildings. By the end of 1996, 48,299 illegally occupied housing units had been vacated. Each househead received a sum of money either to rebuild and/or restore his or her former house or rent a decent residence for the concerned family. By the

22- UNDP, A Profile of Sustainable Human Development in Lebanon, Report 1996.

23- Ministry of Displaced, Return of the Displaced in Lebanon, 1996 Report.

## 5.2 Efforts of line ministries

The Ministry of Displaced and several other line ministries – Ministry of Agriculture, Ministry of Public Works, and Ministry of Education – are implementing projects in the former war zones with the cooperation of UN agencies, the European Union and local non-governmental organizations. These projects aim at making development to be sustainable and also , providing rural community groups in general, and women in particular, with the resources to remain in their areas through the creation of income- generating programs. Several projects covered the rehabilitation of agricultural training centers and water networks damaged during the war, among them. Some of these projects are the rehabilitation of the agricultural training center in Deir -El -Kamar (Shouf) and the provision of loans to farmers to renew their agricultural capacity and repair terraces. These projects are addressed by the Ministry of Agriculture with European Union financing. An agreement of twinning mountainous towns and villages in the Shouf area with European towns has taken place. The project agreement provides cultural and economic exchange and support and it plans to create a youth center for social, cultural and sportive activities, thus strengthening the national consolidation among the local community groups. In addition, several schools have been reconstructed and rehabilitated to receive the returning displaced.

## 5.3 Continuous stress

Unfortunately, the cease-fire of November 1990, did not bring a permanent halt to displacement. There are still several community groups in the south of Lebanon that are constantly exposed to Israeli military and economic pressures, as well as being vulnerable to armed attack. These Lebanese have been forced to flee their homes in massive numbers several times since 1990. In April 1996, thousands of families fled their areas as a result of military attacks. The resulting general loss is estimated at more than US\$ 500 million. The UN High Relief Commission is concerned with those people displaced due to Israeli military attack. Rural areas in general, and displaced areas in particular suffer from the lack of a national integrated plan offering more sustainable economic projects that will assure permanency to the return of the displaced.

## II Environmental management

Since its creation in 1993, the MoE has been the primary responsible body for environmental management. Its responsibility is mainly to formulate a general environmental policy and propose measures for its implementation in coordination with the various concerned governmental agencies.

Several other institutions have direct or indirect involvement in environmental management, (see Table 1), however, because of the impact of the war on administrative structure and human resource capabilities, environmental management has suffered from grave problems: incompatibility, inappropriately qualified personnel, inefficiency, low salaries and overlapping responsibilities.





Coastal and marine pollution

Table 1.

Environment management	Ministries and administrative agencies
Waste water	MoE, CDR, Housing, Hydraulic and Electric Resources, Health, Public Works
Solid/hazardous waste	MoE, CDR, Health, Urban Affairs, Public Works
Water resources	CDR, Health, Public Works
Land use and coastal management	MoE, CDR, Transport, Agriculture, Tourism, Housing, Health
Forest and agriculture.	MoE, Agriculture
Pollution	MoE, Transport, Industry
Cultural heritage	MoE, Antiquities Department

Source adapted from State of Environment, METAP / WB 1995

The several governments since 1992, have recognized the urgent need for reform and rehabilitation, and considered the institutional strengthening as a significant component in the nation's recovery program. This recognition was translated into the creation of several new ministries, mainly the Ministry of Environment and the Ministry of Administrative Reform.

## 1 Institutional framework and capacity building

Since its creation, the Ministry of Environment so far has been experiencing a difficult working environment, in which it has not been easy to establish clear roles of function and intra-governmental lines of communications. It recognizes that the management of multi-jurisdictional environmental issues requires clear and defined means of communicating and allocating responsibilities among line ministries. Three years after its creation, the MoE had only 13 employees including the Director General, and most of these had administrative rather than technical duties. A law was issued 15 March 1995 that allowed the MoE to contract up to around 20 technical staff at salaries commensurate with skills (i.e., beyond the normal pay scales of the public service). Since then, along with the addition of the 20 technical staff, the administrative staff also has increased. Nevertheless, the Ministry still needs to expand its staff, bearing in mind that the law creating MoE specified 139 employees.



The Ministry of Environment

## 2 Priorities of the Ministry of Environment (MoE)

Despite all the obstacles mentioned above, the MoE has established general priorities on the national level; namely, management of hazardous and toxic waste, management of urban air quality arising mostly from traffic, development of land use planning, water resource management, and control of soil erosion. The agenda of the MoE 1997-1998 action plan includes the following priorities:

**(a) Restructuring the organization of MoE:** The law that created MoE does not distinguish between the planning and implementation functions of the Ministry. In addition to weaknesses in the legal framework and fragmented environmental management, environmental monitoring and enforcement need considerable strengthening. For example, the MoE defines conditions for granting permits to classified establishments but lacks the capacity for environmental impact assessment. In order to activate and strengthen the role of MoE and to clarify its responsibilities, a protocol between MoE and the Ministry of Administrative Reform was signed on March 1997 to amend the law on the creation of MoE. This agreement proposes wider responsibilities for the MoE and suggests the establishment of a National Council for Environment related to the MoE, whose purpose would be to prepare suggestions and recommendations to formulate an integrated management policy for the environment, with a master plan for its execution. The amendment will reorganize the organization of the Ministry to clearly define its roles and objectives. The agreement was submitted to the Parliament, and was approved on December 1997, but the Council for Environment has not yet been established. Supported by the Mediterranean Technical Assistance Program (METAP), the MoE has prepared a Strategy Framework of Environment Management which will be submitted to the Cabinet for approval.

**(b) Revision of the National Code for the Environment:** Lebanon has a large body of environmental laws, some dating back to the 1930s. However, these laws are characterized by obsolescence, lack of clarity regarding accountability for implementation, and lack of coherence. Two years ago, UNDP supported the MoE through the "Capacity 21" programme - which was launched in 1994 - in the review of the laws of environment management. In 1997, a Draft National Code for the Environment was prepared by MoE and was recently submitted to the Cabinet. It is the first initiative towards defining the basis and norms for the protection of the environment and resource management policy. The law is expected to be approved very soon.

**(c) Waste management:** An Emergency National Waste Management Plan for the Greater Beirut Area was set by the Ministry in 1997 and the plan has been approved by the Cabinet. The Waste Management Plan proposed by MoE includes: sorting for recycling, composting the organic waste, bailing, and dumping in sanitary landfills. In May 1997 the open-air dumpsite in Bourj Hammoud was closed. Later the incinerating plant in Amrousieh was also closed. At present, Amrousieh and Quarantina are used for sorting and composting. The rest of the waste (non-recyclable) is dumped in Naami landfill - a coastal area in Shouf caza - which has been put to use as one of the several landfills to be established in the Lebanese cazas and muhafazats. For this purpose, studies on environmental impact assessments have been made to decide

and agree on the chosen landfills in the different Lebanese areas. The landfill project is executed by the government with the participation of the Council for Development and Reconstruction and major support from the World Bank. Naami landfill is expected to receive the waste of Greater Beirut for around 10 years. By the year 2000, it is expected that the waste management plan will have been implemented in all the Lebanese areas.

**(d) Quarries:** In Lebanon, there are 710 quarries, of which 246 are for sand extraction. Of the existing quarries, 45% hold a license and 70% of them are impossible to rehabilitate. The MoE has issued certain measures concerning the area in which quarries are permitted to operate. Legal regulations have been implemented and several quarries have been closed down. Closed quarries will be technically and aesthetically rehabilitated in collaboration with all concerned parties.

**(e) Air pollution:** The results of a study (American University of Beirut) on air and noise pollution in Greater Beirut Area, were announced in April 1996. The study included a number of recommendations on reducing air and noise pollution and adopting the use of lead-free fuel. In January 1996, MoE indicated that all necessary decisions and legal measures will be taken to ensure the installation of filters for industrial pollution. After the Ministry's further measures for the installation of filters in several industrial plants, mainly in the Chekka area, air pollution was checked at MoE's request and the results were found satisfactory. A committee was established representing the MoE, experts and local NGOs, to monitor and control air pollution in the Chekka area. At present, a new study is being undertaken by the Ministry of Environment and the Mediterranean Technical Assistance Programme (METAP) on the social and economic impacts on air quality.

**(f) Environmental education and awareness:** A national awareness plan has been established. An agreement between the MoE and the Educational Center for Research and Development (ECRD) has been made to encourage the formation of environmental clubs in schools and the production of environmental films. A committee has been established to follow up on the integration of environmental awareness in the education system. This committee includes representatives from MoE, ECRD, and the Ministry of Education. A protocol concerning environmental awareness in universities will be signed between the Ministry of Environment and the Ministry of Culture and Higher Education.

**(g) Information systems:** MoE has created its own information network, using among other projects, the Sustainable Development Networking Programme (SDNP), a UN project being implemented by MoE. Under the "Capacity 21", the MoE has also launched a remarkable initiative towards strengthening the capabilities of environmental NGOs by providing them with information utilities

(computers), as well as with internet connectivity provided through SDNP.

### 3 Projects of the Ministry of Environment

In order to enhance the implementation of environmental management and sustainable development, several projects have been launched by the Ministry of Environment:

**(a) Capacity 21 Programme:** It is one of the main programs of MoE, and it is supported by UNDP. It seeks to follow up the legal framework, and aims to build the capacity of human resources. The first phase of this project was launched in December 1994 and lasted for two years. The second phase started in August 1997 and will go on for another two years. The broad objective of the Capacity 21 Project is to create an enabling environment for the integration of sustainable development principles in the decision-making processes in Lebanon. Phase II of Capacity 21 will concentrate on networking among NGOs, and on the private sector, as well as concentrating on the restructuring the organization of MoE, reinforcing its legal framework, technical assistance, as well as on training and promotion of public awareness.



Quarries around Beirut. The new quarrying regulations forced some quarries to stop work in 1997

**(b) Sustainable Development Networking Programme (SDNP) :**

It is a UNDP project hosted by the Ministry of Environment. It provides facilities, space, and assistance for the Project Coordination Unit. As member of the Global SDNP family, SDNP Lebanon encourages the participation of all national stakeholders in the formulation and implementation of a national objective: information-sharing among government institutions, the private sector, academia, and NGOs. The objectives of the programme are: access to and use of information, enhanced communication among stakeholders, promotion of public awareness, and capacity building.

SDNP is designed to build capacity and train national stakeholders to become both consumers and suppliers of information on the Internet. This framework is organized by a project steering committee drawn from national stakeholders, and by the creation of a national SDNP Internet site.



Az El Shout protected area - Shout caza

**(c) Protected Areas Project:**

This project has put into place an effectively managed system of protected areas to safeguard endangered endemic species of flora and fauna, preserve their habitats and incorporate biodiversity conservation as an integral part of sustainable human development. The project is testing a specific model of three demonstration parks, where the Ministry of Environment, local non-governmental organizations,



North Ehden protected area - North of Lebanon

and in-country scientific institutions are cooperating and coordinating their activities to promote both the long-term ecological and the short-term economic objectives of wildlife conservation. It will also incorporate educational and sensitizing components directed towards the local communities and will reach out to the public and decision-makers with documentary films and TV spots. The three protected areas now under management are: the Horsh Ehden in the North, Palm Islands in Tripoli, and the Barouk Cedars (Arz El -Shouf) in the Shouf area. At present two more protected areas to be added to the project are: Tyre (south of Lebanon) and Ammiq wetland (western part of Bekaa). Specific objectives of the project include conducting field studies, gathering basic ecological data, and monitoring the health of the protected area. The project also includes educational campaigns targeting a number of population groups within the vicinity of the protected areas, as well as at the national level, in order to assure large-scale sustainability of biodiversity conservation efforts. This will include the preparation of educational materials for awareness campaigns to alert stakeholders on the need for biodiversity conservation and establishment of a protected area network.

The Ministry of Environment has launched the Protected Areas Project in November 1996 for a duration of five years. The implementation of the three protected areas project is taking place under the coordination of the MoE, UN agencies, IUCN and GEF. Protected areas are being monitored and managed for the first time in Lebanon by NGOs and community-based organizations (CBOs).

The management staff of the three protected areas numbers about 20 people including four women (at least) and one war handicapped person. The Tyre Protected Area Project has been submitted to the Parliament and approval is expected soon, while the study on the Ammiq project is being finalized.

**(d) Building Capacity for GHG (Green House Gas) Inventory in response to UNFCCC Communications Obligations:** The United Nations Framework for the Convention of Climate Changes, was signed in 1992 and ratified in 1994. As a result, and in response to the UNFCCC Communications Obligations, a project has been started by MoE for the Building Capacity for Greenhouses Gas Inventory and Action Plans. This project will assist Lebanon in meeting its obligations towards the global environment as a signatory of the UNFCCC as stated in Article 4 of the Convention and to respond to its objective of "stabilization of greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate cycle". The project goal is to build Lebanon's capacity to enable it to fulfill its commitment to the UNFCCC. It also aims to identify and evaluate the vulnerability of Lebanon's fragile ecosystems, habitats and economy to climate change and to seek to reduce greenhouse gas emissions through the development

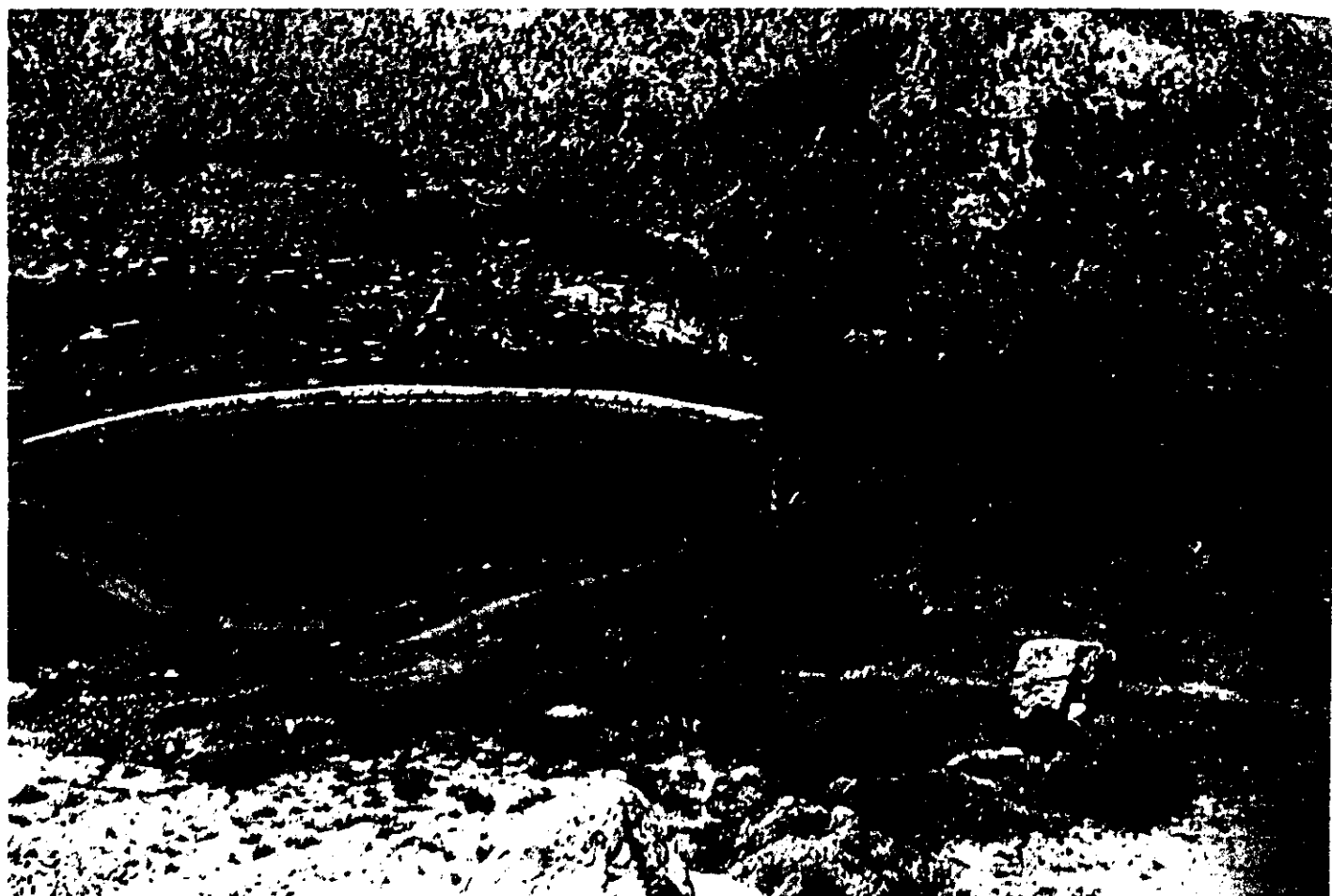
of mitigation strategies consistent with national objectives.

**(e) Ozone Office:** The Ministry of Environment is the national center for coordinating, monitoring, and implementing all Montreal Protocol activities, including the (ODS) Ozone Depleting Substance phase-out project. This institutional strengthening project has established an Ozone Unit to assist the Ministry of Environment to effectively and efficiently phase out ODSs through the adoption of policy and the application of technological and monitoring procedures covering the projects and programs specified in the country programme and as approved by the Executive Committee of the Multilateral Fund of the Protocol.

**(f) Biodiversity Enabling Activity:** The Biodiversity Enabling Activity project assists the Lebanese Government (Ministry of Environment) to develop a National Biodiversity Strategy and Action Plan (NBSAP), a required activity within the framework of the Convention on Biological Diversity (CBD). This project is a follow-up to the Country Report prepared 1997 with the coordination of the United Nations Environment Programme (UNEP). The main elements of the project include the establishment of a national steering committee, biodiversity assessment based on the available data, and the analysis of options via dialogue and consultations that will contribute to the preparation of a National Biodiversity Strategy and Action Plan. An important task in the project is the preparation of the First National Report on the current status of biodiversity and its submission to the Conference of Parties. It will build upon and reinforce existing plans, programs and strategies and will motivate stakeholders to contribute to sustainability through the preservation of biodiversity. Dialogue with stakeholders (familiarization courses), participation in national workshops and community outreach will increase public awareness towards conservation and the judicious use of biodiversity.

**(g) Unit for Planning and Programming:** With the support of the World Bank, a Unit for Planning and Programming Project (UPP) has been established in MoE to follow up and carry out activities and recommendations on Environment Framework Strategy and other sustainable development projects. The unit is also responsible for the coordination and follow-up of ongoing sustainable development related activities initiated by other ministries and in assisting all stakeholders (within UPP's available resources and other resources to be mobilized) in preparing activities related to sustainable development issues. In addition, the Unit is concerned with carrying out selected studies of a cross-sectoral nature, such as transport and air pollution, clean technologies, and water pollution. It is designated to prepare and follow-up on projects with international donors.





Man-made agricultural reservoirs to make use of raining water in dry seasons - Tannourine, north of Lebanon

#### **4 Public awareness and environmental education**

One of the major goals of the Capacity 21 program is to heighten public awareness and spread of environmental information among stakeholder groups. An environmental awareness strategy was established in 1996 and at present, Capacity 21 is currently updating this strategy for submission to the Cabinet. Training activities on environmental issues are organized by MoE in collaboration with UN agencies and concerned ministries, while environmental NGOs have also been undertaking the training of local community groups. Environmental education and awareness campaigns have begun in several schools. A new educational structure has been approved and will be totally integrated by the year 2000, in which environmental issues will be incorporated into all subjects of the school curriculum. In Spring 1997, the Ministry of Environment launched an Environment Day and Seashore Clean-up Campaign, which lasted from June 5th (World Environment Day) until October 15th (Arabic Environment Day). The event covered all the Lebanese areas and ended up with the Arab Environment Festival. During the environmental campaign,

900 young men and women were trained to participate in public awareness and environmental education training programs that were initiated through school clubs and NGOs activities. The successful campaign has become a tradition and was repeated during Summer 1998.

The Ministry of Education, meanwhile, has prepared a strategy for environmental education and sustainable development at the formal and informal levels. The Educational Centre for Research and Development is the main national body assigned to prepare studies and formulate the educational framework and scholaristic programs and it is directly linked to the Ministry of Education.



Desertification in the outskirts of Aarsal - Bekaa area

## 5 Science and technology

The National Administrative Rehabilitation Programme (NARP) was launched in 1993 and seeks the implementation of technology in 32 ministries and public administrative agencies. Information and technical groups of the Technical Cooperation Unit (TCU) have been institutionalized within the various ministries. As mentioned previously, MoE is implementing the use of technology in the service of environmental issues through the Sustainable Development Networking Project (SDNP).

Concerning scientific and technological studies, the National Council for Scientific Research (NCSR), which is directly linked to the Council of Ministers, is the main national body and responsible through its different departments to formulate the scientific needs and strategies and ensure the best utilization of scientific resources for the public benefit. The NCSR includes the following departments: Marine Research Center, Geophysics Research Center, Solar Energy Center, Information and Documentation Center, and Remote Sensor Center. Many universities in Lebanon have developed expertise in the field of the environment and sustainable development and can be considered centers of excellence in the region. NCSR has linked all universities to internet, and a national NGO, the Lebanese Association for the Reservation of Nature (LARN), is supporting these efforts.

## 6 Environmental expenditure and cost recovery policy

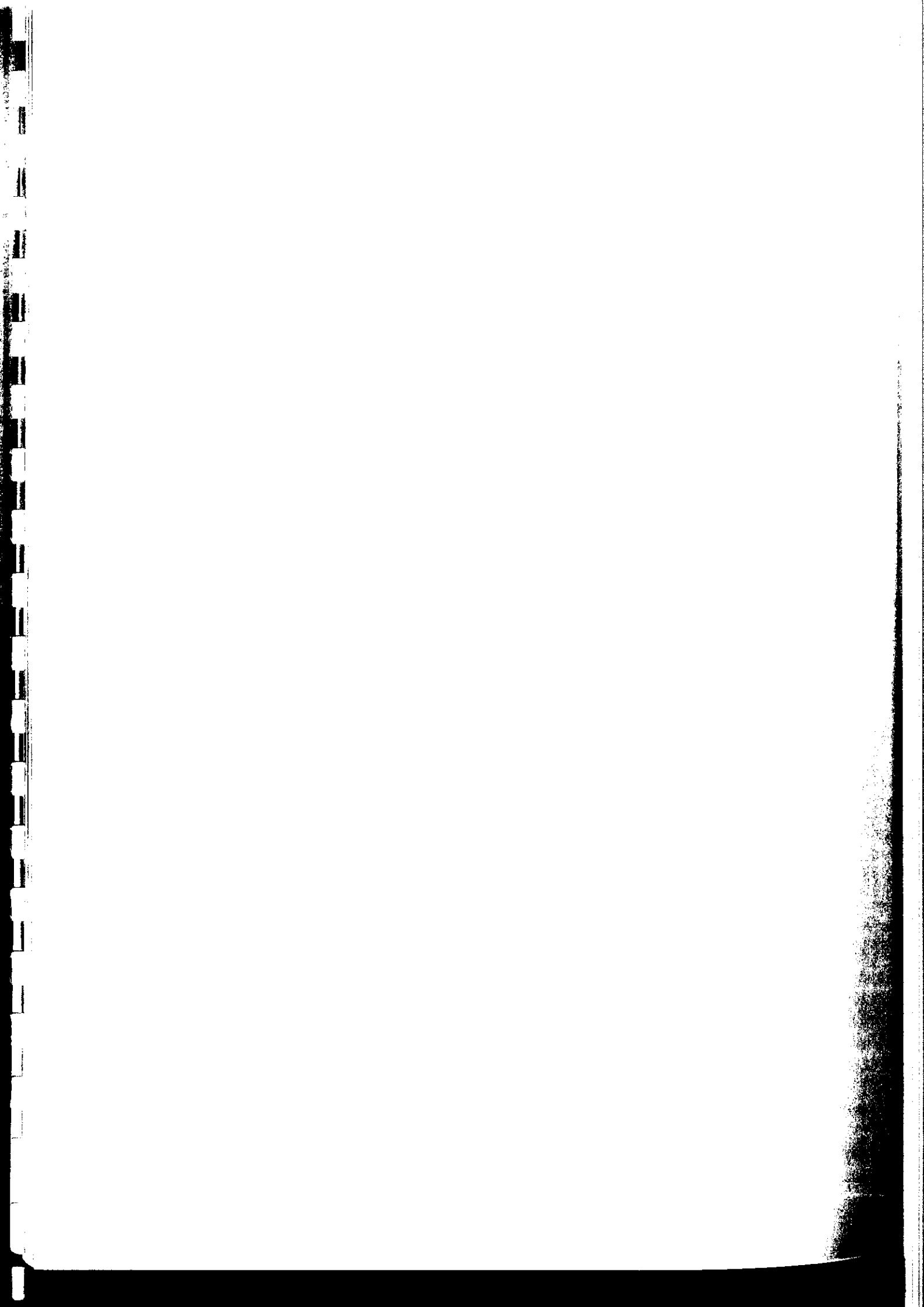
The MoE was established with a capital budget set out in the National Emergency Reconstruction Programme (NERP) of US\$ 33 million over 5 years, which amounted to 0.5% of public sector investment.

Environmental expenditure decreased from \$10 million under the National Emergency Reconstruction Programme (NERP), to \$3.5 million in (Horizon 2000). This means it decreased from 1.8% to 0.3% of total program expenditure. However, since a number of reconstruction projects will generate major environmental benefits, adding solid waste and sanitation to the environmental budget, this indicates a much higher level of expenditures for environmental protection. The government's medium to long term policy, is to apply full cost recovery for environmental services and charges for environmental impacts. It is expected that by the year 2000, governmental policy for cost recovery of different environmental services will be totally implemented, thus giving more chance for higher expenditure on environmental projects. Benefits of the government and private sector from environmental resource mobilization (if implemented) are shown in Table 2.

Table 2 Potential resource mobilization

Funding sources	Estimated amounts (US\$ million)
Cost recovery: <ul style="list-style-type: none"> <li>. Electricity</li> <li>. Water supply</li> <li>. Sanitation</li> <li>. Solid waste</li> <li>. Water mobilization (reservoirs, irrigation)</li> <li>Soil and water conservation</li> </ul>	US\$ 220
Subsidies: <ul style="list-style-type: none"> <li>. Electricity</li> <li>. Fuel oils (Subsidy to electricity)</li> <li>. Water</li> <li>. Agrochemicals</li> <li>. Other</li> </ul>	<ul style="list-style-type: none"> <li style="text-align: center;">US\$ 100</li> <li style="text-align: center;">US\$ 20</li> <li style="text-align: center;">US\$ 120</li> </ul>
Pollution charges: <ul style="list-style-type: none"> <li>. Leaded fuel tax (25% of price)</li> <li>. Natural resource protection fund</li> </ul>	US\$ 77
<b>Total</b>	<b>US\$537</b>

Source: ERM Report 1995



### III Sustainable management of natural resources



A tree nursery managed by a NGO: Aarsal's Association for Rural Development - Bekaa area

#### **Sustainable management of land**

The distribution of lands on the Lebanese surface (10,500 km<sup>2</sup>) is as follows<sup>(24)</sup>:

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24- Source based on a study undertaken by FAO, 1992.

Protected areas	1%	Forestry lands	7%
Urban constructed areas	3%	Arable lands	25%

The long years of unplanned use of land on the coastal zone, as well as in the mountainous areas, caused a grave damage to natural resources. Changing agricultural practices led to degradation of terraced lands, while overgrazing of livestock caused deforestation, soil erosion and desertification. It is estimated that 65% of Lebanese lands are seriously affected by erosion issues caused by wind, temperature change and human activities. War had a direct impact on agriculture when hundreds of males abandoned the land and joined the war or migrated. Cultivated areas dropped during the war from 360,000ha to around 200,000ha. Deforestation, desertification and drought vary from one area to another according to climate, level of unplanned urbanization, and unenvironmental economic and social activities.

## 1 Achievements to combat desertification

As soon as countries affected by drought and desertification were asked to sign and ratify the Convention to Combat Desertification (CCD), the Government of Lebanon, through the Ministry of Agriculture, and the Ministry of Environment answered the call. The CCD was ratified in December 1995 and implemented in March 1996. With the assistance and support of the UN Food and Agriculture Organization (FAO) and the United Nations Development Programme (UNDP), a National Secretary for the Convention to Combat Desertification in Lebanon was recruited, then a National Committee was constituted. This Committee is formed of representatives of non-governmental organizations, representatives of the Ministry of Agriculture and the Ministry of Environment, scientists and experts, and representatives of FAO and UNDP. In March 1997 a first National Awareness Seminar (NAS) was organized and recommendations were advanced to help in structuring a framework for the National Action Programme for Combating Desertification which will allow for better coordination and organization of all ongoing activities at the different scales and levels. The Ministry of Agriculture will host the national secretariat of the CCD. The Committee wrote a project document for the preparation and implementation of a National Action Program for two years starting from 1998, but the program has not yet started because of certain financial obstacles.

### 1.1 Combating soil erosion

Several projects to combat desertification and soil erosion have been initiated in the underserved rural areas. They are:

- (a) **Baalbeck- Hermel Integrated Rural Development Program**, (Bekaa area) is an ongoing project which provides small and medium scale farmers assistance to

start activities that include alternative agriculture replacing illicit crops, improvement of health, social services education, and income-generating non-agricultural activities. The programme is administered by the Ministry of Agriculture and supported by UNDP, UNEP and FAO. It includes social development training for rural women.

(b) **Small Holder Livestock Rehabilitation Project**, was started in the Bekaa area in 1995 with the wide support of the International Fund for Agricultural Development (IFAD), the Young Women's Christian Association (YWCA), and with the participation of local NGOs. It aims at encouraging farmers to stay on their land, and increasing the participatory role of women through training and orientation programs on the technical know-how of agricultural skills. The project provides assistance to farmers through loans and livestock. A Rural Women's Unit was established to encourage women to participate in income-generating work through training programs and loans. The other major ministry involved with this programme is the Ministry of Public Works. The project also is focusing on terracing, irrigation networks and reforestation. It is important to note that the Baalbeck-Hermel area is highly susceptible to desertification problems.

(c) **Two projects undertaken by the Ministry of Agriculture and supported by FAO:**

Providing the assistance to strengthen the **National Pesticides Management System**, and **Utilization of Compost Project**, which aims at establishing quality control of urban waste compost. Both projects are followed and monitored by the Agricultural Research Center at Fanar.

(d) **Protection of the Vegetation Cover** (the European Union Vegetation Program), a project monitored and executed by the Ministry of Agriculture. It aims at combating soil erosion and preserving vegetation cover through reforestation and public awareness. It also trains specialized engineers in managing the natural areas. It is addressing three pilot sites in Lebanon: western part of Bekaa, Nahr Ibrahim, and Hadath-El jibbeh.

## 1.2 Reforestation

On the occasion of the World Day to Combat Desertification 1995, the Minister of Agriculture announced an ambitious five-year program for the reforestation of 40,000 hectares. The Ministry of Agriculture is responsible for the Integrated Capacity Building Five Year Plan. In 1982, the Food and Agriculture Organization of the United Nations (FAO) estimated the country's need for new forest areas as to be equivalent to 200,000 hectares, hence the goal of the new plan is to increase forestry areas from 7% to 20% of national territory.





A pine forest in Jazine area - south of Lebanon

The plan is supported by FAO and other donor organizations. As a result, tree nurseries have been created in the different mouhafazats to produce the trees needed. This activity was accompanied by a decree that prohibits cutting down trees in Lebanon, with violations punishable through fines and even imprisonment. Towards the end of this program, ten million plants are expected to be available annually as of the end of 1998. Reforestation campaigns are being undertaken yearly by local NGOs and CBOs with the support of private sector and international NGOs. Lebanon's forests have suffered considerable destruction as a result of forest fires. Unless an integrated plan to combat forest fires is set up, reforestation efforts may not be effective. Around 1,200 hectares of forest trees are lost every year because of fire, cutting, and urban encroachment.

Research centers are participating in several studies and surveys on the sustainable management of land. The National Council for Scientific Research (NCSR) is working on a Physiographic Mapping of Land Resources Project, an effort that includes classification of soils, mother rocks, land use, and forests. The mapping will become a database for future studies. The project began in 1997

with a modest government budget of L.L. 100 million.<sup>(25)</sup>

## 2 Managing fragile ecosystems

In 1992 Lebanon signed the Biodiversity Convention and ratified it in 1994. It also signed the Convention on International Trade in Endangered Species of Wild Fauna and Flora. As a result, certain initiatives have been taken, such as the biodiversity study, the biodiversity enabling activity to prepare a national strategy and action plan, and the implementation of the Protected Areas Project.



Ammiq wetland - western part of Bekaa

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25- An interview with Dr. Mohammad Chauman, National Council for Scientific Research, (NCSR) 1997.

## 2.1 Biodiversity

A Biodiversity Country Study was undertaken by the Ministry of Agriculture and published in nine volumes in January 1997. It indicated that forest areas in Lebanon witnessed a dramatic decrease in size. In 1993, forest areas were estimated at not more than 70,000 hectares, while protected forest areas measured 2,700 hectares (representing 1% of total land area of Lebanon). Living species documented number 9,119, of which 4,633 are flora and 4,486 are fauna. The Ministry of Agriculture has declared several forests as protected areas.

## 2.2 Cultural heritage

Lebanon has a rich cultural heritage. This includes the world heritage sites of Baalbeck, Tyre, Byblos and Anjar, the old cities of Tripoli and Saida, the recently excavated archaeological sites of Beirut, and a number of other major historical and/ or archaeological sites in urban and rural areas. Because of its interest in recovering its role as a regional tourism destination, Lebanon has signed the International Convention for the Protection of the World Cultural and Natural Heritage. Supported by UNESCO, the Ministry of Culture and Higher Education is undertaking a project for the protection of natural sites and monuments. The Ministry of Environment has declared several sites in Lebanon as natural sites, such as Nahr Ibrahim, in order to save them from urban encroachment and degradation.

## 2.3 Protecting the atmosphere/ Conventions

The United Nations Framework for the Convention of Climate Changes, was signed in 1992 and ratified on August 1994.

The Lebanese Government, through MoE, also signed the Montreal Protocol and its London and Copenhagen amendments in 1993. The Montreal Protocol and its amendments are being implemented. With MoE as the focal point, various line ministries are also involved in implementing the agreed upon conventions. The Ministry of Hydraulic and Electric Resources oversees pollution from power generation plants. The Ministry of Petroleum oversees fuel imports and fuel specifications, and the Ministry of Trade controls the import of Ozone Depleting Substances (ODS).

## 3 Managing biotechnology

There are about fifteen research projects being undertaken at the American University of Beirut laboratories dealing with agriculture, medicine and biochemistry. St. Joseph University has several research projects in the medical department.

The National Council for Scientific Research which is funded by the Lebanese government and international agencies, is the main supportive institution for biotechnology research in Lebanon. However, biotechnology research in NCSR suffers from lack of high technology and funding, and the absence of a national plan policy to orient research is a constraint. The present policy of the NCSR is to support research undertaken by institutes or groups rather than by individuals.

The Arab League Educational, Cultural and Scientific Organization (ALECSO) sponsored a meeting of Arab experts in biotechnology, which was held in Rabat (Morocco) in June 1997. The objective of the meeting was to establish an Arabic network to exchange information, and support biotechnology research and projects. The NCSR participated in the meeting and in the preparation of the network plan.

#### 4 Seas and coastal areas, drinking water resources

Water, particularly water quantities, is the most politically sensitive environmental issue facing Lebanon and the whole Middle East region. Water issues are tightly guarded by the Lebanese Government. Water resources are poorly distributed geographically and seasonally, while the demand for water in Lebanon varies from one area to another (see Table 3).

The annual water surface flow availability is 2,280 Mm<sup>3</sup>/year, and 800 Mm<sup>3</sup>/year (1995 estimates) during the dry period. 75% of the annual flow occurs from January to May. Water resources can supply total needs up to the year 2010. Residents receive 65% of their water supply in surface water. Available groundwater resources amount to 400 - 1,000 Mm<sup>3</sup>/year. However, little is known about the true extent, storage capacity, and residence time of each aquifer<sup>(26)</sup>.

Table 3 Demand for water in Lebanon (Mm<sup>3</sup>/year)

Type of use	1994	2000	2010
Domestic -potable water	205	245	310
Industry	130	205	440
Agriculture irrigation	800-1,105	920	790
<b>Total</b>	<b>1,135-1,440</b>	<b>1,370</b>	<b>1,540</b>

Source: ERM estimates.

26- Assessment of the State of the Environment, Environment Resources Management (ERM), 1995.



A project executed by the private sector on the coast of Dbayé area - north of Beirut

#### 4.1 Marine environment

Lebanon's coastline extends over 220km, most of which is extensively occupied by urban areas (70% of the population). Densely populated settlements along most of the coastline with no adequate services, are causing a major negative impact on the marine environment and environmental health. Fish catches have dramatically declined over the past 15 years. Exploitation of marine resources is unorganized, but has improved since the war when the use of pesticides and dynamite has stopped.

In a study on marine environment, the Marine Research Center (an NCSR department), identified the presence of DDT in fish tissue, and found lead and mercury concentrations in offshore waters. In this respect, pollution of the marine waters is significantly high: Positive concentrations of mercury, copper, cadmium, and PCBs due to discharged industrial wastes (80% of industries lie on the coastal zone), overuse of fertilizers and pesticides in agricultural areas constitute other sources of pollution to the marine environment. A 1993 survey by the Ministry of Environment at 38 sites along the northern coast, revealed that the presence of total coliform and E. Coli in significant samples of variable qualities ranging between 35 and 11,000/100ml. As a result, some beaches were declared unsafe for swimming.

#### 4.2 Fresh water, ground water

According to the National Council for Scientific Research, and the National Water Quality Control Survey UNICEF/AUB (1990), water resources, and the quality of drinking and ground water were exposed to problems similar to those of salt water (see Table 4). The survey indicated that 70% of all fresh water was exposed to bacteriological contamination, while 66% of town water networks, and 78% of village water networks, were microbially contaminated. The past two years have shown an improvement in the state of the national water quality. The National Central Laboratory Water Analysis Data ((1994) recorded that some 80% of the water from wells was bacteriologically polluted, possibly from inadequate sewage disposal. A new water quality survey undertaken by UNICEF and AUB(1996-1997) indicates remarkable progress in water quality .



Palm Islands protected area - north of Lebanon

Table 4 Potential Environment Stress on Water Resources

Economic/ Human Ac- tivity	Source of Impact	Evidence of Stress
Agriculture	Excessive use of surface and groundwater for irrigation	Seasonal water shortages. Build up of salinity in agricultural soils, leading to reduced crop productivity.
	Excessive application of agro-chemicals	Possible contamination of groundwater from pesticides and nitrate health implications.
Industry	Discharge of liquid waste	Highly contaminated rivers and coastal waters.
	Haphazard disposal of solid waste	Possible contamination of rivers, groundwater, and coastal waters from leachate.
Transport	Used of leaded gasoline	Lead in rivers and coastal waters from urban storm water run- offs.
	Disposal of waste oils	Waste oils disposed in rivers, wells and sea, leading to chronic long-term pollution, impose increased costs for treatment.
Energy	Hydropower Thermal power stations, discharge of cooling water to coastal waters	None Thermal pollution possibly leading to changes in marine ecology and possible damage to fisheries.
Human Settlement	Uncontrolled sewage disposal in some areas, inadequate provision of sewerage Excessive use of groundwater resources for domestic supply	Bacterial contamination of ground and surface water; health hazard. Saline intrusion in groundwater in coastal areas.

Source: Assessment of the State of the Environment, by ERM, November 1995.

#### 4.3 Efforts to improve the situation of the water environment

Lebanon is participating in a number of international conventions governing the management and monitoring of the Mediterranean, including: the Mediterranean Action Plan (MAP), the Barcelona Convention and its four protocols, the Marpol 73/78 Convention and all its annexes, and the UN

Convention on the Law of the Sea. The protocols were signed in December 1994 for the protection of the Mediterranean Sea against pollution from inland sources, and for Mediterranean protected areas.

The MoE, the Directorate of Urban Planning, and the Ministry of Transport, are the major groups involved in the efforts for managing seas and protected marine areas. Through the assistance of UNDP projects, mainly Capacity 21 and Protected Areas, MoE is working with NGOs and other stakeholder groups on human resource development and training for the integrated management and sustainable development of coastal and marine areas and wetlands. Women and youth are mainly involved in these projects. The improvement of the infrastructure network, including waste water management in the Greater Beirut Area, will improve overall water quality. Additionally, the new Emergency Plan for Solid Waste Management that MoE launched in 1997 closed the coastal Bourj-Hammoud dump site and mitigated its grave impact on the marine environment. Moreover, successful initiatives have been launched by several NGOs and environmental school clubs to clean the Lebanese coast (summers of '95, '96 and '97).

A new department has been established within the Ministry of Hydraulic and Electric Resources (MoHER) to monitor water quality in Lebanon. As a result, the Ministry trained the technical staff of water authorities to monitor the quality of drinking water on daily basis in collaboration with AUB laboratories and supported by UNICEF. Meanwhile, a new national water quality control survey is on the way. The Council for Development and Reconstruction has prepared a master plan in coordination with the Ministry of Hydraulic and Electric Resources to increase the supply of fresh water resources, while MoE is collaborating with MoHER in water monitoring and preparing a study on water resources in Lebanon.

## **5 Waste management**

Solid and hazardous waste collection and disposal services were severely affected by the war. Solid waste collection equipment was either damaged through acts of war or has deteriorated due to aging and lack of maintenance. As a result, solid waste was dumped indiscriminately along roadsides, in vacant lots, and in irrigation canals, causing water pollution problems, as well as blockages in the irrigation system. Existing solid waste disposal sites were overfilled and waste from those sites located along the seacoast were often washed away by the sea and carried to other countries. Industrial solid wastes and medical waste were generally mixed with municipal refuse. Other critical problems were the illegal disposal of industrial hazardous waste from highly polluting industries (tanneries, paint, metal finishing, etc.) and the disposal of the thousands of barrels of hazardous waste that were imported during the war period and



dumped in mountainous areas, mainly in Kesrwan. A national plan for waste management was declared by the Ministry of Environment in which incinerators were closed in the Greater Beirut Area. Sukleen, the private company who is in charge of waste collection in Greater Beirut Area and some other Lebanese areas, began at the end of 1997 sorting out the waste to be recycled and reused. The remaining waste is taken to landfills that meet the international standards for sanitary landfills.

### 5.1 Efforts to improve waste management

The Basel Convention was ratified in 1994 and implemented in 1995. In 1994, MoE has signed a bilateral agreement, according to Article (11) of the Basel Convention, with the German Government concerning the import of used batteries. Consideration to limit toxic waste production was started within the GATT framework. In March 1996 an agreement was signed by Mediterranean countries to



An old Roman bridge - Jisr Al Kadi - Shouf caza



Bourj Hammoud open air dumpsite - north of Beirut - was finally closed in 1997

eliminate twelve toxins, including aldrin, chlordane, chlorinated dioxin, PCBs and others. Within the framework of the Basel Convention dealing with toxic waste, the hazardous waste that had been imported to Lebanon was reshipped again from Lebanon to its originating countries, who covered the expenses of reshipment.

### 5-1-a Waste water

The master plan for rehabilitating waste water infrastructure being undertaken in Greater Beirut Area will alleviate negative impacts on ground water. A waste water treatment plant project has also been completed in the Greater Beirut Area (Ghadir waste water treatment plant). The next step will be the rehabilitation and construction of several wastewater treatment plants in other parts of Lebanon. Construction and supervision contracts totaling some \$45 million have been awarded for a collector sewer in the north of Beirut. It is evident that the environmental impact of the recovery program on waste water and its treatment will be positive: reduction in health hazards and improvement in coastal water quality.



Waste disposal causes contamination of ground water - Wadi Nahr - El Motte - G. Beirut area

### 5-1-b Solid waste

The MoE's integrated plan for Greater Beirut Area consists of the adoption of the following activities in each waste treatment facility: sorting for recycling, composting, bailing and , dumping in sanitary landfills in compliance with geotechnical standards. Solid waste collection in Greater Beirut Area has been resolved. The management and treatment of the wastes have recently been initiated. Waste collecting in other different Lebanese regions is usually monitored and contracted by local municipalities. In some areas, the waste collection service is handled by a private company; in others, local community groups organize and execute waste collection. The dump sites in some of these areas are randomly selected and completely uncon-



Marine pollution caused by uncontrolled sewage disposal

trolled; neither environmental impact assessments, nor environmental audits have been carried out in this domain. Early in 1997, with approval from the Council of Ministers, the Ministry of Environment came with its emergency plan to close the Borj Hammoud dumpsite, and the incinerator plant in Amrousieh, and also to initiate a recycling and composting process in Beirut and the muhafazats. The Council of Ministers has approved the plan. In June 1997, the Minister of Environment confirmed that no more incinerators will be established in Lebanon. At the request of the Council of Ministers, the MoE in 1997 has prepared , a study on the appropriate sites for sanitary landfills in the Lebanese muhafazats and presented it to the Council for approval. Action towards this alternative approach to waste management is promoted among NGOs and CBOs and supported by UNDP.

#### **5-1- c Toxic chemicals and hazardous wastes**

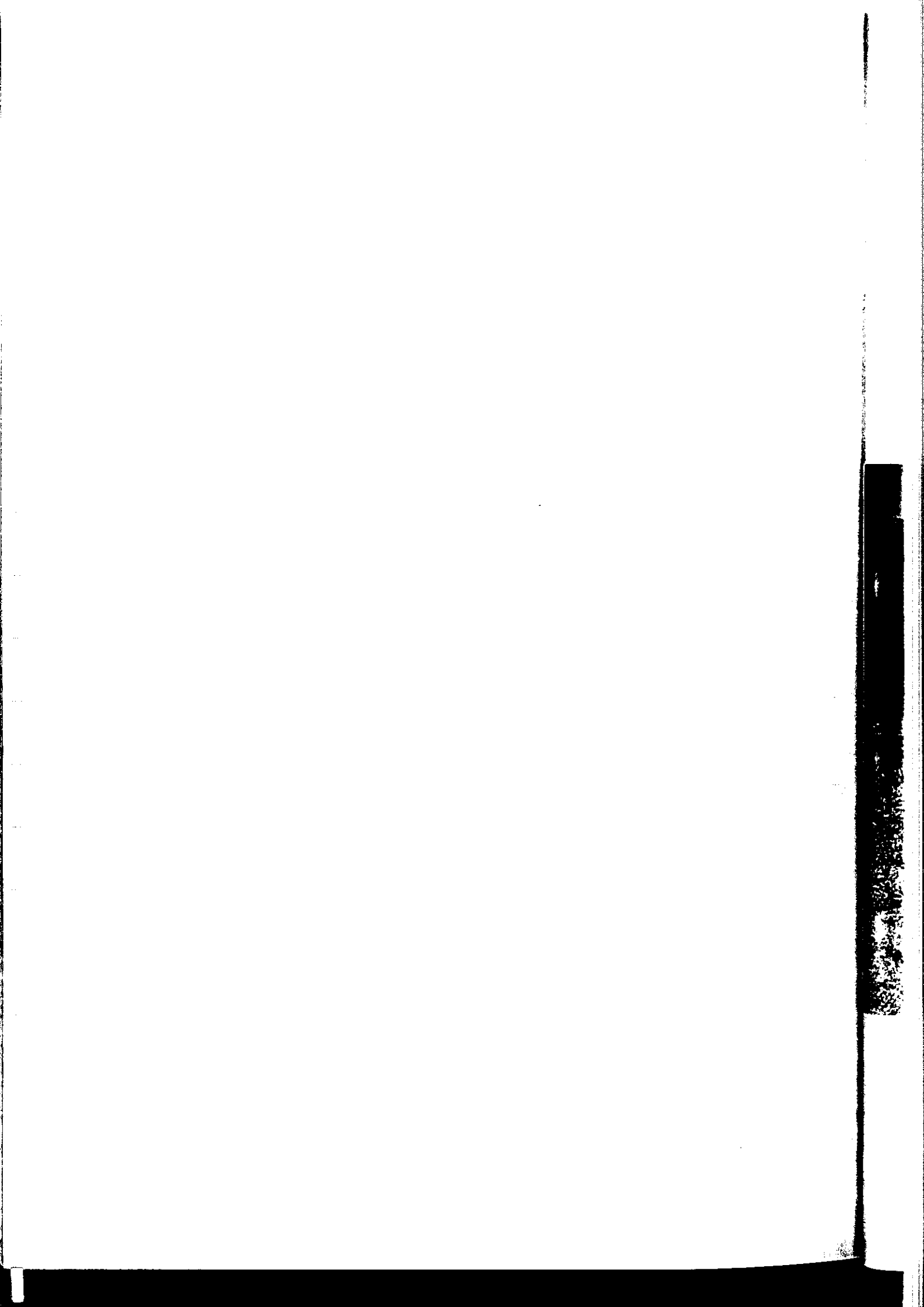
In coordination with the MoE, the Lebanese Institute for Norms and Measures (LIBNOR) has prepared an integrated study on norms and standards for the industry to show the industrial measurements of clean environmental production. The Lebanese Government passed the Decree No. 22/1 dated 17/12/96 concerning the organization of plastic waste imports according to the green, red and orange lists approved by EU. Preventive measures for limiting the import of illegal hazardous wastes, have been strengthened and a government decree has been issued for limiting the import of several plastic substances not previously listed in the 1988 Law on Hazardous Waste. Various wastes which originated in developing countries and entered Lebanon, have been confiscated and reshipped. Laboratory tests on water and soil samples taken from different regions (where barrels of hazardous wastes were found) and carried out in France and Lebanon concluded that there was no trace of pollution. The management of toxic and industrial chemicals is handled by Customs Authority, and Ministry of Environment (MoE) at points of entry. The implementation of decisions is a collaboration between MoE and the Ministry of Industry. International NGOs (Green Peace), local NGOs , and the mass media participated in highlighting up the issue of hazardous waste through daily follow-ups and campaigns of public awareness . With the support of Green Peace, a local NGO (Green Line) has issued a book on hazardous waste and its dangerous impact on humans, animals and vegetation.

#### **5-1- d Biomedical or hospital wastes**

With World Bank support, and in coordination with MoE, the Council for Development and Reconstruction has commissioned a feasibility study on biomedical waste management. The next phase will be the implementation of a treatment plan for biomedical wastes to be undertaken by expert international companies.

The National Council for Scientific Research (NCSR) has a mandate to

formulate safety standards and develop regulations and procedures for the importing, use and disposal of radio-active sources, and to develop local capabilities for monitoring doses of radioactivity in humans and the environment. Also, the Lebanese University is in the process of establishing a laboratory for nuclear analytical measurement.



## IV Role of major groups



CBOs in Arsal-Eastern part of Bekaa - are combating desertification by implementing agricultural projects

The achievement of the local and national potential will be facilitated by the increased participation of the different groups of civil society in national and local government. In

order to consolidate the civil peace, the Taif Accord mentioned the establishment of an Economic and Social Council that would include all sectors of the civil society. It was expected that civic society organizations (NGOs, universities, labour unions, the private sector, research institutions, mass media) would eventually participate in the national decision-making, and advise on national policies and programs and their implementation. But unfortunately, this Council has not yet been implemented, though a draft decree law on its composition was prepared by the government in February 1996. Nevertheless, and because of the social situation, the government has recognized that to solve pressing socio-economic problems, a new social contract needs to be agreed upon. This can be realized through the implementation of the Economic and Social Council, which would provide a major support to economic and social development. It is evident that sustainable development can not be achieved without an agreement between the government and other stakeholders on development of the opportunities and resources available, and on the priorities and policies that would ensure equitable sharing of the burdens and returns of development among the different groups of society<sup>(27)</sup>. This section covers the initiatives of major social groups concerning social development, mainly the empowerment of NGOs, women and youth, local authorities, trade unions, the private sector and mass media.

## 1 Environmental NGOs

Since 1992, several new environmental NGOs have been formed, although Lebanon had witnessed the establishment of a few NGOs many years before the Earth Summit. In the early 80s, the activities of environmental NGOs were rather theoretical, covering research and case studies on wildlife, forests, rivers, flora and fauna, and the marine environment.

During the painful wars in Lebanon (1975-1991), NGOs in general played a major role in dealing with the effects of the war and in supporting civil society. Due to the weakness of governmental institutions and services, the role of these NGOs became indispensable.

The NGOs undertook initiatives in managing social and health centers and in implementing integrated projects for women, the disabled, and displaced people. Lebanon was considered as a geographical war zone prior to humanitarian support. This situation gave the Lebanese NGOs the chance to enrich their experience, as well as, increase and develop their institutional and human capacities.

When the war came to an end, the Lebanese Government started

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27- UNDP, A Profile of Sustainable Human Development in Lebanon, 1997.

rehabilitating, not only the material infrastructure, but also its institutions and social services. The government participated in the Earth Summit and signed its Conventions. One of the Earth Summit resolutions, "Agenda 21", is an integrated framework aimed at sustainable development and directed towards governments, civil society and NGOs. "Agenda 21" declared that sustainable development is justly implemented when it is correlated with protection of environment, and mitigation of overuse of natural resources. The government's participation in Earth Summit was translated into implementing sustainable development, which will be successfully achieved, only if the local community groups and all sectors of civil society participate in decision -making and in choosing their priorities and projects.

During the war, environmental concerns were inevitably considered to be a luxury. As the fighting decreased, public concern for the environment began to reappear and environmental NGOs were reformed. On 13 November 1992, eight of the NGOs combined to establish the Lebanese Environment Forum (LEF), whose purpose is to unify and strengthen the initiatives of its member organizations. The Forum, undertakes reforestation, establishment of sanctuaries, restoration of old churches and mosques, in addition to public awareness campaigns for protecting the environment. The environmental NGOs in Lebanon became aware of their role in the process of sustainable development, and sought to become an effective pressure group in the protection of the environment, and in monitoring and assessing the environmental impacts of the local projects. There are now more than 30 active institutions and societies, distributed throughout Lebanon, which are concerned with environmental issues. Their activities focused primarily on urgent local issues.

Still, Lebanese environmental NGOs so far have been weak at the national and international levels in terms of effectively lobbying for policy changes. Their work as "professional institutions" is still in its infancy, and their role is weakly converted into effective action. This is due to several reasons :

- Sustainable development and the protection of the environment are new concepts worldwide. Lebanon suffered from a long war in which environmental issues were considered to be a luxury. This presented a situation that faced the environmental NGOs whereby they had to develop their concepts and formulate appropriate long- term work plans in line with the Earth Summit resolutions, and mainly "Agenda 21".

- The experience of environmental NGOs is still limited. They have not had enough time to develop their institutional and human capacities, nor to draw up long-term work plans. The work of NGOs depends mainly on the initiatives of individuals and their enthusiasm to fight for the protection of the environment.

- After the war, Lebanon ceased being a priority to supporting organizations and international donors. This has deprived environmental NGOs from the material support needed to implement their projects and build their capacities.





Seashore cleaning-up campaigns by NGOs - Summer 1996

the programs supported by different donors - for a simple reason: because the local governmental institutions and the NGOs know their needs on the ground better than the regional or international donors.

Nevertheless, active environmental NGOs played a major role in lobbying and applying pressures for the creation of MoE. Since its birth, the Ministry of Environment (MoE) has been seeking a long-term strategy of coordination among environmental NGOs. It also realizes the urgent need for a broad network between NGOs and the Ministry. Organizations hold monthly coordination meetings with the Minister of Environment, and workshops and seminars are set up by MoE and NGOs to disseminate environmental information and raise public awareness. The Ministry of Environment has increasingly become aware of the major role NGOs have to play in the pursuit of sustainable development. To help NGOs to succeed in playing this role, a preparatory process has been introduced to assist them in building their infrastructural, physical, and human capacity. "Capacity 21" is an umbrella project whose main



Young members of local NGOs and CBOs are fighting forest fires - Summer 1996

Most of the projects implemented locally are decided upon mainly by the donors and supporting organizations. In the absence of equal partnership, the NGOs are reduced to no more than convenient implementation instruments for donor's program at the national and local level, instead of serving as major players and decision-makers. What is really needed for NGOs, is to become themselves the leading decision-makers in designing

objective is to support environmental NGOs; it has identified their needs and priorities, and aims at strengthening their institutional, administrative, and human capacities. This moves NGOs a step forward, from "amateurs" to "professionals" which represents a challenge not only for NGOs, but also for the implementing forces and decision-makers of Capacity 21 (MoE and UNDP), recognizing that action on the ground is the fruit of cooperation among multi-lateral actors. The recent initiatives of Capacity 21 – putting NGOs in reliable access to information – increased NGOs knowledge in the use of the media and helped them formulate greater awareness of the links between environment and development objectives. Capacity 21 provided the NGOs with administrative staff and computer devices, while the Sustainable Development Networking Project (SDNP) provided them with access to information through the Internet.

The long-term objective of Capacity 21 is to encourage local NGOs to design their projects according to their priorities and needs, and to pursue their own material support to implement them. The Lebanese Environment Code, which was submitted recently to the Parliament, includes the establishment of an "Environment Fund" which will help NGOs in drawing up long-term workplans and implementing their projects. Another objective of Capacity 21 is to support each environmental NGO to become specialized in a certain environmental issue. Some NGOs have already defined their roles, such as the "Society for the Protection of Nature in Lebanon" (SPNL), which is considered a pioneering NGO. Supported by LIFE (a UNDP project), SPNL has established the Environment Information Center (EIC). The objective of EIC is environmental education and public awareness, as well as dissemination of information among stakeholders, mainly schools and NGOs. Other NGOs are designing their own projects and becoming specialized in certain environmental issues, such as the "Association of Forest Development and Conservation" (AFDC) in the Aley and Shouf cazas, whose main concern is in reforestation, forest fire prevention, and environmental training. It has established a pine-tree nursery and an environmental training center. The Association "Liban Nature et Environnement" (LINE) has succeeded in raising funds through a twinning project with the Pyrenees (France) in order to build the "House of Environment" in the Metn area which will be a center for environmental education and public awareness. Other NGOs are implementing several projects in waste management (sorting and recycling), reforestation, cleaning campaigns, preserving natural sites, and establishing environmental clubs in schools. Some of these projects will be mentioned later in this section.

## 2 Youth and gender

With the coordination of several ministries, various initiatives have been undertaken by different UN agencies to strengthen public awareness among community groups, mainly among youth and women. Several environmental projects have been implemented, among them environment awareness strategy

and programs, environment education strategy, and environmental information dissemination. Line ministries, each in its field, are implementing projects to strengthen the integration of youth and children on important issues. Through NGOs, the MoE is encouraging youth involvement in environmental public awareness, as does the Ministry of Agriculture in its annual reforestation campaigns. The Ministry of Education, as mentioned previously, is working on the implementation of environmental education throughout the National Education System. Children, youth, and women have more access to information on the environment and sustainable development through school clubs and CBOs. By the year 2000, environmental education will be totally integrated in the Education System. Most of local NGOs participate in youth activities in the form of youth forums and summer camps.

The Ministry of Education through its Directorate of Youth and Sport holds summer youth camps, thus strengthening the national consolidation and open discussions among the youth who suffer from disorientation and identity crisis. The Ministry of Social Affairs encourages youth summer camps, where voluntary work is provided to implement sustainable development projects, mainly in rural areas. The Ministry of Displaced has organized youth summer camps for returning groups and local community people to help strengthen national consolidation and peace. Discussions among young people coming from different areas of Lebanon are bearing fruit. Young people are getting to know each other, after 17 years of turmoil and partition.

In 1996, one parliamentary session was held in which the Speaker of Parliament chaired a question-and-answer dialogue with a large group of "children who acted like deputies". The community groups are involved in the Protected Areas project and its management staff includes people chosen from them.

## 2.1 Involvement of women in public life

1994 Figures<sup>(28)</sup>

Total enrollment in educational institutions	770,599	49.91%	Female
Primary enrollment	360,858	48.6%	Female
Secondary enrollment	261,341	52.2%	Female
Vocational enrollment	44,651	47.4%	Female
College enrollment	74,810	48.19%	Female

28- Ministry of Environment, Country Sustainable Development (CSD) Profile, 1997.

Percentage of women<sup>(29)</sup>

In Parliament: (The total number of deputies is 128)	2.34%
In Government (Ministers)	0%
General director	1 out of 10
Chairwoman, Lebanese University	1 out of 13
Director, Lebanese University	2 out of 47

The Population and Housing Survey undertaken by the Ministry of Social Affairs in 1996, revealed considerable improvement in the overall gender issues. Female illiteracy has decreased markedly from 43.3 percent in 1970 to 18 percent in 1996.

Lebanon has participated in several global programmes for women and sustainable and equitable development. In 1996 Lebanon has signed (with reservation) the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW). Most of the country's NGOs, primarily those concerned with human rights and well being (especially women and children), are involved in reviewing and preparing educational material to promote gender issues awareness. Several NGOs also participated in the Beijing Conference. As a result, a National Commission for the Advancement of Women was established by Governmental decree. UN agencies and the EU are supporting the creation of a national strategy in cooperation with a committee of concerned NGOs, in order to implement and enforce the Convention to Eliminate Discrimination Against Women.

## 2.2 Participation of women in sustainable development

Several projects have been undertaken for the improvement of gender issues, such as the ongoing project for Development of Women Enterprises. It was launched by the Ministry of Social Affairs on February 1996 with the support of UNDP, and UNIFEM. To date, the project has been able to develop a core of twenty trainers and business counselors at the Ministry of Social Affairs and also to conduct nine training courses for women entrepreneurs from different parts of Lebanon. So far, 230 women and two male entrepreneurs have graduated from the program.

More projects related to strengthening women's capacity are supported by international NGOs, such as OXFAM, Freidriche Eberte, and the YWCA. Part Three of this report covered some of these projects, including the Small Holder Livestock Rehabilitation Project in the Baalbeck-Hermel area where a Rural

29- Aman Chaarani, "The Lebanese Woman", (Arabic), Commission Nationale Libanaise, UNESCO, 1997 Report.

Woman Unit was established to support women in launching their own small business ventures.

Women's involvement in environmental management is increasing. In 1995, Arabsalim Women's Association (south of Lebanon) started a solid waste collecting and sorting campaign. They began with composting organic waste campaigns and trained the local community groups to sort plastic, metal, and glass for recycling. In 1997, the UN project (LIFE) began lending its support to the association.

The Urban Management Planning programme (UMP) is implementing a similar project in the Beirut Area, where some 300 women collect and sort waste (paper, tissue, and glass) and at the same time create income-generating work for themselves. This project is also supported by LIFE.

### 3 Local authorities

Since its independence in 1943, Lebanon had witnessed only two municipal elections - until the recent elections in May-June of 1998. The absence of the municipal authorities led to the increasing separation of local communities from involvement in and commitment to the management of their environment and the development of their local potentials. Statistics published in 1996 by the Ministry of Municipal and Rural Affairs indicated that 50% of municipalities did not have a council and that 25% were under regional administration.<sup>(30)</sup> Survey results also revealed the poor state of basic public and social services at the local level. For instance, in more than 70% of municipalities septic tanks were utilized as the only means of wastewater management disposal and 52% of villages and towns disposed of household waste solely by burning. Deterioration in the quality of life in certain regions was essentially due to inadequate municipal management, since municipalities are expected to ensure most of health and public services. Before the recent elections, there were only some 107 municipalities who were active in Lebanon, and the lack of sustained integrated projects in rural areas kept the municipalities very poor. The major problems faced by most of the urban and rural municipalities were solid waste, sewerage, preserving cultural heritage, public health and urban planning. Municipalities in rural areas are also plagued with organizing domestic and irrigation waters, as well as urban encroachment in their agricultural lands and forest areas.

Nevertheless, in the last few years, several municipalities in Lebanon have initiated some remarkable activities dealing with environmental management. The municipality of Tripoli has successfully launched a five year dump site

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30- UNDP Lebanon Development Cooperation, 1997 report.

project which, with World Bank support, will receive the city's waste for the next five years. In the Kesrwan area, the local authorities have succeeded in involving their communities in funding and supporting a municipal park, as well as introducing environmental management projects such as waste collection and street cleaning. In Hammanah (Metn caza ), the local authorities successfully coordinated with local NGOs in solving environmental problems such as solid waste management. In Bcharré (North of Lebanon), and supported by LIFE (A UN project), a local NGO, with the coordination of the local authorities, launched a project for collecting and sorting solid waste and got the community involved in a recycling program and an environmental awareness program.

#### **4 Private sector**

Since 1994, private sector organizations have repeatedly called for privatization of public infrastructure and public services. It is argued that the rehabilitation and operation of the public utilities can be delegated to the private sector under agreed arrangements and under strict supervision of clear policies on pricing and marketing services. The private sector, both in this country and abroad, possesses significant financial capability, a considerable human potential and technical abilities. The government is continuing its preparatory activities towards the restructuring of public services with a view to reviewing their status and/or management and operational arrangements. There have been positive developments occurring in the electricity and telecommunication sectors in particular.

The improvement of private sector growth is a government priority. The Lebanese Investment Development Authority (IDAL) has been vigorously promoting Lebanon with a view to attract private investment. It developed its project portfolio and commissioned a number of important studies. The period of 1995-1996 witnessed the development of new bank products (personal loans, housing loans, payments and credit cards, etc.). Banks aim to finance economic and social projects (expansion and modernization of small-scale enterprises, rural loan programmes, creation of micro- enterprises and handicrafts). The Beirut Stock Exchange formally reopened on 25 September 1995, after a break of nearly 13 years. In March 1996, the Beirut Chamber of Commerce and Industry created with the participation of eight Lebanese economic organizations a Lebanese Center of Arbitration. The Lebanese Industrialists Association in mid-1996 finalized an agreement with the banking sector to facilitate financing of small and medium-scale enterprises. Six local banks offer loans of three to seven years (including a grace period) for the construction of premises, workshops and equipment.

In July 1995, the Council of Ministers approved the creation of ELYSSAR, a mixed company for the redevelopment of the Beirut's Southern Suburbs through a public works and housing redevelopment program whose value is estimated at

US\$ 2 billion. In September 1995, the Council of Ministers approved the establishment of the privately held real estate company "Société Libanaise pour le Developpement du Littoral Nord de la Ville de Beyrouth" (LINORD), which was capitalized at US\$ 250 million to develop the coastal area north of Beirut, including commercial and residential space and solid waste and waste water treatment sites. The reconstruction of Beirut Central District, which was almost completely destroyed during the war, was initiated in 1994 by SOLIDERE, a privately-held reconstruction company. Infrastructure and the restoration works of important heritage buildings in the center will be completed at the end of 1998.

As an outcome of several meetings and sessions under UNDP guidance and support, working groups identified certain priority activities including the implementation of eco-efficiency activities, advancing public-private partnerships, and interacting with other organizations in the region through exchange of information and experience. Some specific activities include:

-Delta programme in Lebanon. This program aims at "Developing Environmental Leadership Towards Action" through the creation of a network of business and industry working towards common economic and environmental objectives.

- Public-private partnerships for the urban environment.
- Public-private partnership for eco-efficiency in the Mediterranean region.

These activities are supported by UNDP, METAP, the World Bank and others. Several private sector associations are also interested in implementing these activities including the Association of Lebanese Industrialists (ALIND), the International Chamber of Commerce (ICC), and the Lebanese Businessmen's Association.

## 5 Labour unions

Since 1992, labour unions have reactivated their movement and pressure for better pay, and improved social benefits. The social situation since the end of the Lebanese war in 1991, has not been ameliorated. The recommendations adopted by the government in June 1994 concerning its socio-economic policy were not initiated until mid- 1995, when an indefinite strike of teachers led to a change of government. In 1996, the government announced a general ban on manifestations, to prevent a strike by the General Confederation of Labour Unions. In the same year, the government finally agreed to an adjustment of salaries and some changes in social programmes. In late 1996, the General Confederation of Lebanese Workers (GCLW) organized a seminar on collective negotiations in cooperation with the International Labour Organization (ILO). The recommendations of the seminar emphasized the necessity to protect trade

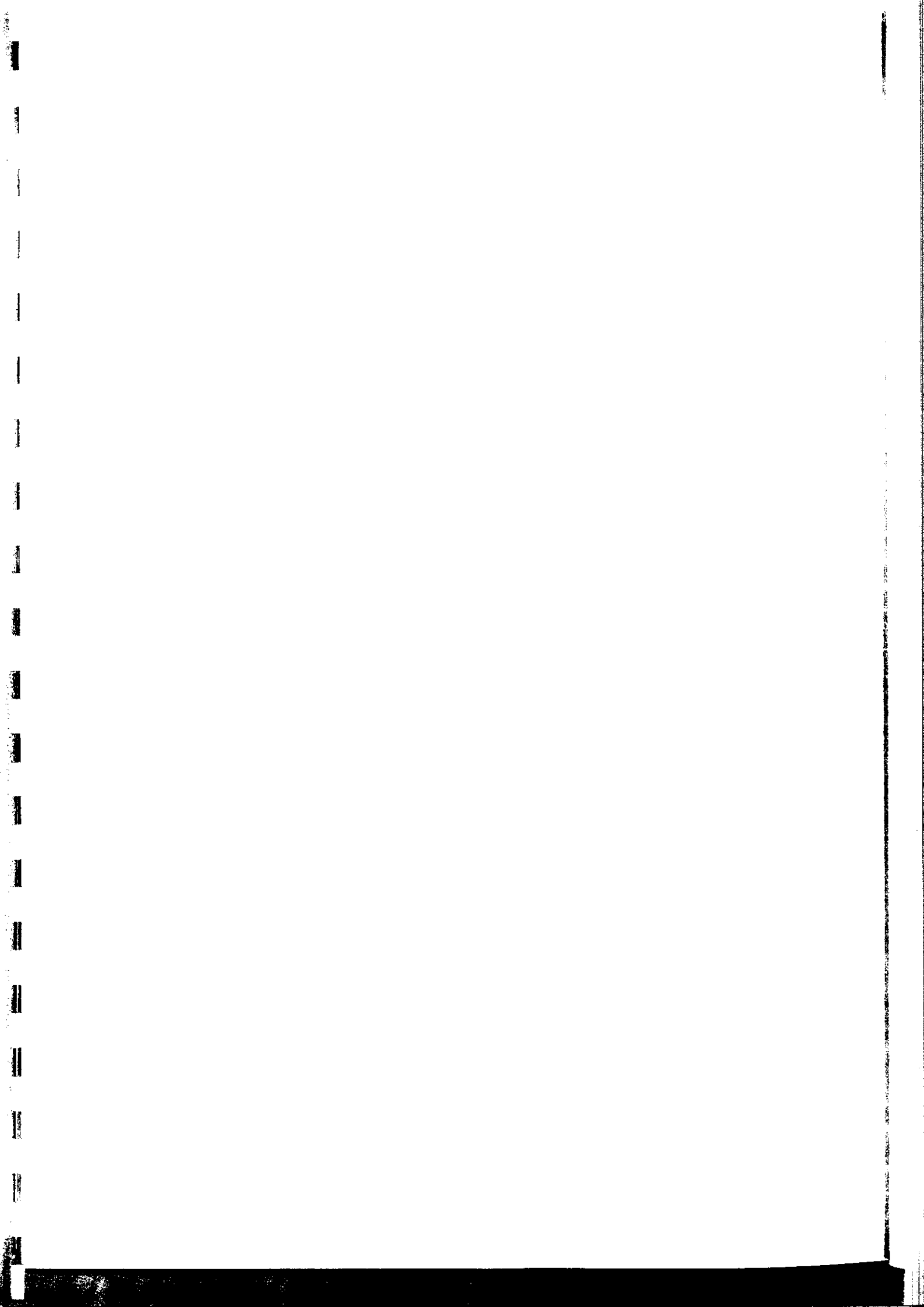
union freedom, and called for the protection of public freedom and collective negotiations. In 1997 a split occurred in the trade union following GCLW elections. The split weakened its capacity to solve the vast problems faced by workers, such as salaries, inflation and the cost of living. The split, however, did not last for long; an election in the summer of 1998 ended the split and the General Confederation of Lebanese Workers is once again unified.

## 6 Mass media

In April 1997, the Ministry of Environment held a two-day workshop on "Media and the Environment", which was attended by several journalists, who write on environmental issues. The workshop sought to heighten media involvement in environmental issues by urging them to treat and present environmental issues as important national issues and not merely as news.

Since March 1997, one of the leading newspapers in Lebanon, (Al-Nahar) has devoted an entire daily page to environment and heritage, reflecting different opinions of community groups, NGOs and experts on a number of several environmental issues. One of the newspaper's weekly supplements, "Nahar of the Youth", is mainly concerned with human rights, education and environment. Its target group is the wide range of young Lebanese people. Since it began publication in March 1996, the Lebanese monthly magazine "Environment and Development" has been concerned with environmental issues within the general context of sustainable development on global, regional and local levels. It is the first of its kind in the Arab world. It is interesting to know that this magazine is published and directed by an engineering company, thus reflecting and strengthening the role of the private sector in environment and sustainable development.





## Conclusion

### Barriers and Recommendations:

This report has reviewed national progress in Lebanon since the Earth Summit in 1992, with respect to sustainable development and environmental management. In its four parts, the report did not discuss nor analyze the situation, but rather reflected the progress made during the last five years. It covered economic and social factors, environmental management in terms of legal and institutional framework and management of land and water resources. It also revealed the role of major groups, such as NGOs, community groups, the private sector and local authorities in enhancing sustainable development. It also highlighted the advantages and disadvantages of initiatives undertaken by several stakeholder groups.

While reviewing this report two main facts can not be forgotten:

- 1- Lebanon suffered a 17-year war that destroyed its economic stock and gravely damaged its social services (health, education, environment, etc.).

- 2- Environmental management, in terms of institutional and legal framework, is new in

Lebanon; the Ministry of Environment was created only five years ago.

The war settled down just on the eve of Earth Summit, thus giving the Lebanese Government a tremendous chance to reconstruct the country and implement sustainable development through reconstruction of the infrastructure, administrative reform and through human development. Reconstruction activities were initially based on the National Emergency Reconstruction Program (NERP). Phase II of the reconstruction program, (Horizon 2000) is under way, covering in addition to the physical infrastructure sectors, the social infrastructure and private sectors. Administrative reform began with the creation of the Ministry of Administrative Reform, which launched the National Administrative Reform Programme (NARP), thus putting the ministries and governmental institutions on an efficiency track through the introduction of technology, expertise, and in-service training, and information concerning environment and sustainable development.

Lebanon is still facing the challenge of participation and integration in the global framework of environmental management and sustainable development suggested in Agenda 21. In contrast to the significant environmental agenda in Lebanon, there is only a limited amount of resources - financial, institutional, technical, and human - that can be made available for environmental management in the short run. Therefore, the challenge is to focus limited resources on carefully selected priorities to gain the greatest social benefits in the most effective way.

Initiatives on the international and national levels have been undertaken. The ongoing reconstruction will definitely have a positive impact on the economic growth. International conventions on Biodiversity, Combating Desertification and Climate Changes and others have been signed and ratified. Ad-hoc projects are being executed, mainly by the Ministry of Environment, the Ministry of Agriculture, the Ministry of Health, the Ministry of Education and several other ministries. But a longer time is required for the assessment and evaluation of the initiatives and action plans undertaken by the several ministries concerning environmental management and sustainable development.

Remarkable progress has been achieved through the participation of NGOs and local community groups in environmental management. For the first time in Lebanon the management of the Protected Areas Project was entrusted to local NGOs and CBOs, and several women are participating in its management staff. This experience is seen as a success story that, with planning and cooperative effort, can be repeated in realizing a variety of environmental goals throughout the country. Moreover, certain environmental NGOs are playing a major role in national decision-making concerning environmental problems such as hazardous wastes and quarries.

**The implementation of sustainable development in Lebanon is still facing major barriers due to several reasons:**

- The government's policy stresses the reconstruction of the infrastructure. Meanwhile, the initiatives undertaken by line ministries concerning socio-economic development related to health, education, agriculture, employment and other income-generating opportunities (mainly in rural areas), were implemented as ad-hoc projects, without a strategy framework to combine all projects together in an integrated national plan.

-The lack of updated land use planning for urban and rural areas, as well as the lack of a database and census concerning demographic dynamics and human health.

-Since its creation, the Ministry of Environment has been working under difficult circumstances. The overlapping responsibilities among several ministries concerning environmental management is a major problem. In addition, most environmental laws in Lebanon were enacted 50 years ago and have not been updated since. Nevertheless, the Ministry of Environment has been able to issue several decrees pertaining to international conventions and national agreements on environmental management and sustainable development. It is needless to say that the approval of the amendment of the law on the creation of MoE, as well as the National Code for Environment, will help the Ministry in implementing environmental management strategies and programs.

-Weakness of the role of local authorities in rural areas. Since 1943 the Lebanese government organized only two municipal elections which prevented local rural authorities from participating in the sustainable development of their areas. Now however, since the recent May-June 1998 municipal elections, local authorities are expected to play a major role in environmental management.

**Based on the report's contents, several recommendations are proposed:**

-**There is an urgent need to undertake environmental impact assessment studies on large ongoing projects executed in Lebanon by the private sector.** The Government's approval of the Environment Impact Assessment project prepared by MoE and submitted to the Cabinet is a necessity.

-**Agricultural development must be a priority on the government's agenda.** Urban overpopulation is due to internal emigration from rural areas to urban areas. The government, as mentioned before, doesn't have an integrated action plan for integrated sustainable development in rural areas. That covers health, education, agriculture and other income-generating economic opportunities.

- **Integration of environmental education in the national educational program, as well as through non-formal channels must be achieved.** This project has been started through the "Educational Center for Research and Development", with the participation of the Ministry of Environment.

- **There is an urgent need to strengthen the existing institutions with major responsibility for environmental management, with a special focus on the Ministry of**

Environment. The Ministry needs to improve its capabilities in most areas in order to fulfill its mandate.

- **Encourage and enhance the establishment of the Council of Environment**, which was decided in the protocol signed by the Ministry of Environment and the Ministry of Administrative Reform and was approved by the Cabinet in December 1997. It is likely that this Council will bind the ministerial initiatives within one integrated master plan for sustainable development.

- **Implement the Environment Strategy Framework** that was prepared by MoE to be submitted to the Cabinet. This framework will involve all stakeholder groups in environment management and sustainable development. Implementation of laws through incentives and enforcement of high fines for violations will enhance the progress of sustainable development.

- **The urgent need for a national environmental information system** to support decision-making at several levels and to disseminate environmental information to the general public, as well as target information to in-service staff within ministries and public institutions. The absence of measured information about the condition of the environment in Lebanon makes it difficult to develop a strategic view and monitor compliance with environmental regulations. Nevertheless, SDNP (a MoE/UNDP project) is expected to play a major role among ministries in fulfilling this need by creating a network of environmental awareness among ministries and, between ministries and stakeholder groups (the private sector, NGOs, CBOs, universities, centers of research, etc.).

- **Encourage CBOs to participate in sustainable development projects** through training sessions and the dissemination of information that concern and help them apply environmental patterns of consumption. Additionally, the creation of income-generating projects must be achieved in cooperation and coordination with local community groups and by assisting in their needs.

## Annex I

### Major decrees issued by the Ministry of Environment, 1993 - 1998 :

In spite of the difficulties, the Ministry of Environment has issued several decrees that enhance the implementation of Agenda 21, both on national and international levels. Most of these decrees are being implemented successfully.

- Decree 1/93 (11-5-93); prohibited burning of car tires.
- Decree 2/93 (20-5-93); Organized the activities of quarries, mining, and asphalt factories.
- Decree 2/B (12-5-94); prohibited use and importation of birds' voice recording devices.
- Decree 7/B (10-1-94); organized hunting seasons and places.
- Decree 8/B (10-1-94); prohibited hunting all over the Lebanese territory from 1/1/95 until 31/12/97. This decree is issued by MoE and MoAg and is implemented in most of the Lebanese areas.
- Decree 15/B (21-9-94); prohibited and stopped the work of all unlicensed quarries, and sand mining.
- Decree 20/B (2-11-94); identification of well-established and specific measurements for environment protection from pollution.
- Decree 22/B (14-11-94); an authorization for a certain private quarry.
- Decree 11/1 (19-5-95); organizing hunting (MoE and MoAg).
- Decree 5/1 (18-8-95); organizing the import of petcock.
- Decree 9/1 (18-9-95); amending the decree related to petcock importation.
- Decree 14/1 (6-10-95); creation of a Natural Conservation in Karm-Chbatt - Kobeiatte.
- Decree 15/1 on (5-10-95); prohibition of any work or change in Fakra Bridge area, Kesrwan.
- Decree 22/1 (6-11-95); imposition of certain environmental conditions on industries and factories.
- Decree 23/1 (6-11-95); prohibition of importation or use of extinguishing liquid devices.
- Decree 27/1 (6-12-95); amending the decree 1/9 related to the importation of petcock.
- Decree 37/1 (18-1-96); licenced importation of asbestos.
- Decree 40/1 (20-3-96); amending decree 22/1 applying environmental conditions on the industries.
- Decree 41/1 (25-3-96); amending decree 37/1, subjecting the import of asbestos to prior approval from the MoE.
- Decree 42/1 (26-3-96); prohibiting the importation of asbestos.

- Decree 52/1 (29-7-96); identifying well- established specifics and measurements for the mitigation of water, soil and air pollution.
- Decree 91/1 (24-10-96); organizing waste importation (chemical, industrial,...etc.)
- Decree 22/1 (17-12-96); amending the decree 91/1 related to waste importation.

It prohibited the import of all plastic waste according to the list provided by EU.
- Decree 34/1 (14-1-97); considering Nahr Ibrahim as a natural and reserved site, protected by MoE.
- Decree 51/1 (13-3-97); establishing a committee to follow the issues concerning industrial pollution in Cheakka and Selaata.
- Decree 57/1 (4-4-97); establishing a consultancy committee to follow the issues concerning quarries.
- Decree 72/1 (28-8-97); implementation of the preventive program for Eternit Company - Chekka.
- Decree 76/1 (28-8-97); establishing a consultancy committee headed by the Minister of Environment to follow up the issue of solid waste.
- Decree 103/1 (4-7-97); the Ministry of Environment is authorized to monitor and control waste dump sites and landfills.
- Decree 165/1 (12-9-97); prohibiting the importation of birds' voices recording devices.
- Decree 191/1 (8-10-97); requesting all the companies of cement industries to abide by the MoE's guidance concerning the cement industry in Lebanon.
- Decree 151/1 (17-10-97); classifying Qadisha Valley (Kannoubin and Kozheya) as natural sites protected by the Ministry of Environment.
- Decree 182/1(7-11-97); identifying conditions and qualifications for quarries.
- Decree 186/1 (7-11-97); identifying qualifications and conditions for the authorization of quarries used for the cement industry.
- Decree 200/1 (14-11-97); identifying the rocky coastal area in Tabarja, Kisrwan, as one of the natural sites protected by the Ministry of Environment.
- Decree 22/1 (24-2-98); classifying Wadi Nahr Aljawz, Batroun caza, as one of the natural sites protected by the Ministry of Environment.

## Annex II

### Environment federations and NGOs are:

#### - Federations:

The Lebanese Environment Forum: It consists of more than 30 environment NGOs and was established 5 years ago.

Green Forum : It was established in March 1997. It consists of around 9 NGOs.

#### - NGOs:

Society for the Protection of Nature in Lebanon (SPNL)

T.E.R.R.E.

Friends of Nature.

S.O.S. Environment.

Association for Social and Cultural Development - Nabatiyeh.

Societe de Protection des Animaux - SPA.

Center for Environmental Development in Hermal.

Mouvement de l'homme-Antelias and Beirut.

Association for the Conservation of Environment - Beharré .

Friends of Cedar Forest.

Society for Protection of Nature - Sh' hym .

Committee for Environmental Protection and Cultural Preservation - Nabatiyeh.

Friends of Ehden Forest Society.

Protection of the Environment Committee - Chekka.

Bird Society - Hazmieh.

Scientific Society for Environmental Education and Development - Tripoli.

Society for Conservation of Nature - Bekaa.

Environmental Committee - Baalbek.

Animal Encounter - Aley.

L'Association Libanaise Pour La Maitrise De L'Energie (ALME).

Amwaj - Beirut.

Arsal Rural Development Association - Bekaa.



- Arz El Shouf Society (AES).
- Association Ecologique de Ghazieh.
- Association for Development of Kfarhabab.
- Association for the Protection of Environment and Culture - Koura.
- Association for Forest Development and Conservation (AFDC) - Aley and Shouf.
- Association for the Protection of Environment and Man.
- Association pour la Protection de l'Environnement et du Patrimoine (ADEP).
- Association pour la Protection des Sites et des Anciennes Demeures (APSAD)
- Byblos Ecologia.
- Genacle Libanaï pour la Protection de l'Environnement.
- Council for Environment and Heritage - Qubayat.
- Environment and Health Committee - Aley.
- Environment Protection Committee - Tripoli.
- Environment sans Limite - Maghdoucheh.
- Friends of Nature - Jounieh.
- Green Line Association.
- Green Ocean Association.
- Lebanese Committee for Environment and Development.
- Lebanese Committee for Environmental Protection - Beirut.
- Lebanese Energy and Environment Academy (SEDRA).
- Liban Nature Environnement (LINE) - Metn.

## Acronyms and abbreviations

ALIND	Association of Lebanese Industrialists
ALME	Association Libanaise pour la Maitrise de l'Energie
ALECSO	Arab League Educational Cultural Scientific Organization
AUB	American University of Beirut
CBOs	Community Based Organizations
CCD	Convention to Combat Desertification
CDR	Council for Development and Reconstruction
EDL	Electricité du Liban
EIA	Environment Impact Assessment
ECRC	Educational Center for Research and Development
ERM	Environment Resources Management
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GCLW	General confederation of Lebanese Workers
GDP	Gross Domestic Product.
GEF	Global Environment Fund
GHG	Green Houses Gas
GNP	Gross National Product
ICC	International Chamber of Commerce
ICESD	Inter-Agency Committee on Environment and Sustainable Development
IDAL	Lebanese Investment Development Authority
IFAD	International Fund for Agricultural Development
ISO	International Standardization Organization
IUCN	International Union for Conservation of Nature
LARN	Lebanese Association for the Reservation of Nature
LIBNOR	Lebanese Institute for Norms and Measures
LIFE	Local Initiative Facility for the Urban Environment
LINORD	Société Libanaise pour le Developpement du Littoral Nord de la ville de Beyrouth

MoAg	Ministry of Agriculture
MoAR	Ministry of Administrative Reform
METAP	Mediterranean Technical Assistance Programme
MoD	Ministry of Displaced
MoEd	Ministry of Education
MoE	Ministry of Environment
MoHER	Ministry of Hydraulic and Electric Resources
MoPH	Ministry of Public Health
MoPW	Ministry of Public Works
MoSA	Ministry of Social Affairs
NARP	National Administrative Rehabilitation Programme
NAS	National Awareness Seminar
NCSR	National Council for Scientific Research
NERP	National Emergency Reconstruction Programme
NGOs	Non-Governmental Organizations
ODS	Ozone Depleting Substance
PPP	Polluter Pays Policy
RRR	Reduce, Reuse, Recycle.
SDNP	Sustainable Development Networking Project
UNFCCC	United Nation Framework for the Convention of Climate Changes
UNIFEM	United Nations Development Fund for Women
UNDP	United Nations Development Programme
UNEP	United Nation Environment Programme
UNESCO	United Nation Educational Social and Cultural Orgaization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
WB	World Bank
WHO	World Health Organization

## Bibliography and references

### Collection of data has been achieved through:

- Questionnaires were distributed among NGOs, and other major groups (academia, centers of research, ...etc.) in order to record progress during the past five years.
- References, publications.
- Meetings with experts and concerned stakeholders.
- Personal contacts.

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