



The Ministry of Environment ... A New Vision .... A New Dawn

The Vision , an Environmental clear policy and a yearning ,

Our policy carries the following titles :

- ◆ Every human has got the right for a healthy Environment , and this according to the Human Code of rights - Third Generation - and to our own codes .
- ◆ Every Human owns the right use the Environmental resources , including the power of the Ecology to renew them .
- ◆ The Sustainable Human Development which , in order to be dedicated to Humans , requires a sustainability and stability in its progress .
- ◆ The Essential Foundation for Human's existence and Health , present and future , is the Environment , and its continuity is synonymous to life on Earth , and it also the thrust of all future international relations on this planet .
- ◆ Strong Economy means Healthy Environment , for what we see in Economy is the sustainability and the perpetuity which could not continue unless Ecology renews its resources .
- ◆ Our Environment is endangered and it needs the merge of all absolute fighting powerful capacities in order to :

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Republic of Lebanon  
Office of the Minister of State for Administrative Reform  
Center for Public Sector Projects and Studies  
(C.P.S.P.S.)

- 1) Stop the Ecological Waste
- 2) Cease the Environmental destruction , the abuse of all its resources and the criminal wounding that it suffers from .
- 3) Fight the pollution right from the source .

**Our priorities are :**

1. To Find a solution to Solid waste , drinking water , Industrial Waste in order to prevent all Water pollution .
2. To Find a solution to all emissions resulting from transport vehicles , industries and manufactures in order to prevent Air pollution .
3. To find a solution to increase the green spaces and encourage agriculture in order to fight the Desertification process and the land's neglect .
4. Stopping the anarchistic construction spread , by seeking an urban and organized planning which takes into consideration the system linking the Environmental benefits to the social and the habitat needs .
5. Study of the Ecological benefit and the Environmental influence to all development projects .
6. Dissemination of Ecological Awareness through Education , Media , Committees Ecological campaigners , Official and non governmental organizations .
7. Acknowledging and Legalizing the code of Environment which confirms the Vision , the directional tendency , the Environmental policy , and Empowering the Environmental Laws by enforcing their codes .

**Our partners are :**

1. An Alert Educational and Media coverage .
2. Professional and Scientific Body who use their knowledge for the general benefit
3. Environmental civic organizations and a bright human society
4. International Organizations
5. Government institutions and responsible .

**Our Work Team :**

1. Employees and contractuels , though few but hard working .
2. Voluntaries and Activists , whose main worry is to fight for a better Environment
3. Workers in International projects and programs aiming to enforce the role of the Ministry of Environment through :
  - \* The projects of the United Nations Development Programs which include
    - Capacity 21
    - Climate Change
    - Biological Diversity
    - Natural Reserves In Lebanon
    - Sustainable Development Networking Program .
  - \* Mediterranean Environmental Technical Assistance Program ( METAP )
    - Unit Of Planning and Programming World Bank .
  - \* The European donation represented by the SIU-3 , or the Sector Implementation Unit - 3 .

All those projects handled by a carefully selected and ambitious youth , yearning for a better future , are implemented in close coordination and effective cooperation between the Ministry and the International funding parties , highlighted by a nobility of the objective and a high sense of responsibility .

Our bet is to ensure the effective cooperation and coordination between government institutions and civic and International organizations .

Our hope is to work together for the benefit of the Human race , to achieve sustainable human development ,

To work for Life in Lebanon

For Life on Earth .

Thank you All



وزارة البيئة / رؤيا جديدة  
التوعية / الإعلام / التربية / الجمعيات البيئية  
الجامعة الأميركية في بيروت // ١٩٩٧/٩/٣٠  
نبيل أبو غانم

في سياستنا البيئية ، البيئة شراكة :  
وزارة ومؤسسات رسمية / هيئات دولية/ إعلام/ توعية/ تربية/  
جمعيات .. ومجتمع  
• الإعلام شريك وفي الرؤيا .. أن ينتقل الإعلام البيئي من نقل الخبر  
إلى توصيل الرسالة .. إلى التغيير في أنماط التعاطي مع البيئة ..  
إلى تعميق الوعي ، تحويله إلى مواقف ، إلى تثمير المواقف بما  
يخدم الإنسان .  
واقع الحال عندنا ؟ !

ندرك تماما " حرص الإعلاميين البيئيين  
وندرك أن بعضهم محكوم بتوجه الوسيلة وسياستها ..  
البيئة هم يومي وهاجس ..  
همنا .. البيئة الصحّ ، السياسة الصحّ تماما " كإعلاميين  
الصحّ

إعلامنا البيئي يتميز بحيوية وكثافة اهتمام ، سلبه وإيجابه مطلوب ،  
مرحب به ، لأنه يساهم بفعالية في التوعية البيئية .

الإعلام بنظرنا شريك في صناعة القرار ، فاعل في تحقيق تنمية بشرية  
مستدامة ، مدخل أساس لمشاركة المواطن ، المجتمع ، في السعي إلى  
بيئة أسلم وفي حفظ البيئة  
الوزارة تؤمن بالإعلام ، تحترمه ، تؤكد على شراكته ، منفتحة في  
تعاملها معه ،  
أولته الإهتمام المبكر من خلال الحلقة الدراسية للإعلاميين التي عقدتها  
في نيسان ٩٧

والوزارة باتجاه نشرة دورية / توثيق المعلومات/ نشر المعلومات  
والدراسات/ إنتاج معينات توعوية .. ملصقات ، منشورات ، برامج ،  
..

والتوعية ، الإبن الشرعي للإعلام الموضوعي ، عملية ثقافية ، علمية ، شرطها الإستمرار ، تنمي معرفة ، تحولها إلى مواقف وسلوكيات . . إلى عمل ، وهي أساس في الوصول إلى تحقيق غايات السياسة البيئية

التوجه في وزارة البيئة يطمح ويسعى إلى تدريب كادرات واعية لمهامها البيئية في :

الوزارات والإدارات المعنية بالبيئة

المؤسسات النقابية

المؤسسات الصناعية والإقتصادية

المؤسسات الأهلية والأندية والجمعيات الكشفية والهيئات الشبابية

• التربية ، فعل بناء ، حاضنة الوعي لذا كان السعي ونجحنا بتعاوننا مع وزارة التربية :

في إدخال المفاهيم البيئية والتربية البيئية صلب المناهج التربوية الجديدة ،

في تبني خطة النهوض التربوي مبدأ تأسيس أندية بيئية في المدارس ، في التوافق مع المركز التربوي للبحوث والإنماء على إنتاج أفلام تربوية بيئية ،

في الإتفاق مع وزارة التربية والمركز التربوي على عقد حلقات تشاور لإنجاح التربية البيئية في المناهج الجديدة بمشاركة منسقي لجان التأليف لمناهج ومقررات التعليم العام وبمشاركة مديريات وزارة التربية المعنية ،

واستكمالاً للتوجه التربوي ، كان لا بد من اتفاق تعاون مع وزارة التعليم المهني والتقني بدأ الحوار بشأن إنجازه . السعي جاد إلى اتفاق أيضا مع وزارة الثقافة والتعليم العالي ،

ووزارة البيئة تحضر مع المختصين لإنجاز حقيبة بيئية وتحضر مشروع تدريب مكثف، تعرضه على وزارة التربية يشارك فيه معلم - منشط بيئي واحد على الأقل لكل مدرسة لرعاية الأندية البيئية وتفعيلها بعد إطلاقها.

• والجمعيات البيئية ، شريك وأدوار فاعلة :

توعية" ، عملا" مباشرا ، مراقبة ، حماية ، تطويرا" ،

مساهمة في رسم سياسة وترجمة للسياسة البيئية ،

والأفق مفتوح . .

والأفق مفتوح ٠٠

نسعى لمشاريع مع الشركاء : هيئات دولية ووطنية وأهلية ، مؤسسات وإدارات رسمية إلى ترجمة السياسة البيئية وإلى انخراط وطني عام في التصدي للمشكلات البيئية

لوقف الهدر/ لمنع التخريب/ لمكافحة التلوث في مصادره/ لاستدامة التنمية/ لحفظ بيئة الإنسان /

ذلك أن سلامة البيئة شرط استمرار حياة البشر

وشرط الإقتصاد السليم وكل تنمية

وإن البيئة السليمة تعني سعادة ، رقي ، تطور البشر ،  
والبيئة أرث كل الناس ،

أرث الماضي ،

أرث المستقبل ،

والبيئة ثروة البشر الأبقى وهي أرقى من ارتجال

وأرقى من أغراض ومصالح آنية

إنها الرؤيا الجديدة لحياة تستمر

بشفافية التعاطي الواعي والمسؤول

تحفظ ، تبقى ، فيبقى الإنسان سرها

وكنها وغاية الغاية .

والشكر لكم

Conference:  
**Ministry of Environment:**  
**A New Vision, A New Outlook**  
September 30, 1997

Agenda

9 00 a.m.	<b>Dr. Nassir Sabah</b> (Dean of Faculty of Engineering and Architecture - AUB) <i>Introduction.</i>	Time 5 min
9.05 a.m.	H.E. Minister of Environment <b>Akram Chehayeb</b>	Time 10 min
9 15 a.m.	<b>Mr. Chafic Abi-Said</b> <i>The Revised Role of MoE An Overview of Legislative Implementation Steps</i>	Time 15 min.
9 30 a.m.	<b>Mr. Monir Bu Ghanem:</b> <i>Building National Capacity for Sustainable Development (Capacity 21)</i>	Time 15 min
9 45 a.m.	<b>Mr. Nabil Bu Ghanem</b> <i>Role of Media, awareness and the involvement of NGOs at MoE</i>	Time 15 min
10 00 a.m.	<b>Dr. Naji Chamieh</b> <i>Unit of Planning and Programming (World Bank)</i>	Time 15 min
10 15 a.m.	Discussion	Time 20 min
10 35 a.m.	Coffee Break	Time 25 min
11 00 a.m.	<b>Mr. Faysal Abu Izzeddin</b> <i>Role of Protected Areas Project in Promoting Peace in Lebanon (UNDP)</i>	Time 15 min
11 15 a.m.	<b>Mr. George Akl</b> <i>Sustainable Development Networking Programme Overview and Progress (UNDP)</i>	Time 15 min
11 30 a.m.	<b>Mr. Walter Gebeshuber</b> <i>Overview of SIU-3 Engagement at MoE. (SIU-3)</i>	Time 15 min
11 45 a.m.	Discussion.	Time 20 min
12.05 a.m.	Coffee break.	Time 20 min.
12.25 p.m.	<b>Dr. Sati' Arnaout:</b> <i>Technical and Policy Support Program. (SIU-3)</i>	Time 15 min
12.40 p.m.	<b>Mr. Ignacio Manzanera</b> <i>Lebanon's New Solid Waste Policy. (SIU-3)</i>	Time 15 min.
12.55 p.m.	<b>Dr. Fadi Chehayeb</b> <i>The Role of Information Technology at MoE. (SIU-3)</i>	Time 15 min
13 10 p.m.	Discussion	Time 30 min
13 40 p.m.	Closure followed by lunch buffet	



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- وزارة البيئة : رؤيا جديدة . . إطلالة جديدة . .  
والرؤيا : سياسة بيئية واضحة وسعي ،  
وعناوين سياستنا البيئية :
- . لكل إنسان الحقّ ببيئة سليمة معافاة // هكذا في شرعة حقوق الإنسان - الجيل الثالث . . وفي شرعتنا .
  - . لكل إنسان الحقّ بالاستفادة من موارد البيئة بما يضمن قدرتها على تجديد مواردها .
  - . التنمية البشرية المستدامة التي تفترض لتكون بشرية ومستدامة بيئية سليمة وتوازنا في التنمية .
  - . البيئة أساس في صحة وحياة الإنسان ، حاضرا " ومستقبلا " ، وهي أساس في استمرار الحياة على الأرض لذا ، هي محور العلاقات المستقبلية بين أمم الأرض .
  - . الإقتصاد السليم يعني بيئة سليمة لأنّ الإقتصاد السليم معنيّ بالاستمرار والاستدامة التي لا تتأمن من إلا من خلال قدرة البيئة على تجديد مواردها .
  - . بينتنا أضحت على الحافة وتحتاج استنفار كلّ الطاقات للمواجهة التي تكون :
١. بوقف الهدر البيئي.
  ٢. بوقف التّخريب البيئي واستنزاف الموارد والتّعدّي على البيئة.
  ٣. بمكافحة التلوّث في مصادره .
- والأولويات :
١. منع تلوّث المياه بحلّ مشكلة النفايات الصلبة والصرف الصحيّ والنفايات الصناعية .
  ٢. منع تلوّث الهواء بحلّ مشكلة الانبعاثات من النقل والمصانع والمعامل
  ٣. منع تلوّث التربة وانجرافها ومكافحة التصحّر بالعودة إلى الزراعة وزيادة المساحة الخضراء
  ٤. الحدّ من الإنتشار العشوائي لحركة العمران بتنظيم مدنيّ يأخذ بعين الإعتبار الجدوى البيئية والضرورات الإجتماعية - السكانية - العمرانية
  ٥. دراسة الجدوى البيئية والآثر البيئي لمشاريع التنمية



٦. تعميم الوعي البيئي من خلال التربية والإعلام والجمعيات والناشطين والمؤسسات الرسمية والأهلية
٧. إقرار شرعة بيئية تؤكد الرؤيا والتوجه والسياسة البيئية وتفعيل القوانين البيئية وتطبيقها .

شركاؤنا:

تربية وإعلام واع ، أهل علم واختصاص يوظفونه للخير العام ، هيئات أهلية بيئية ومجتمع أهلي مدرك ، هيئات دولية ، مؤسسات رسمية ومسؤولون .

فريق عملنا:

١. موظفون ومتعاقدون ، قليل عددهم ، كبير جهدهم
٢. متطوعون وناشطون ، همهم بيئة أفضل
٣. عاملون في مشاريع دولية وبرامج هادفة إلى تفعيل وزارة البيئة دورا " وإنتاجية" من خلال :

\* مشاريع برنامج الأمم المتحدة الإنمائي UNDP ،

قدرات ٢١

التغير المناخي

التنوع البيولوجي

المحميات الطبيعية في لبنان

مشروع شبكة التنمية المستدامة SDNP ،

\* برنامج المساعدة التقنية للبيئة في المتوسط METAP

وحدة التخطيط والبرمجة UPP

البنك الدولي

\* هبة الإتحاد الأوروبي من خلال وحدة التنفيذ القطاعية SIU-3

هذه المشاريع التي تتولاها نخبة منتقاة من شبابنا الطامح لغد أفضل وبالتنسيق والشراكة الفعلية بين الوزارة والجهات الدولية الممولة على قاعدة نبل الغاية والهدف والمسؤولية ،

رهاننا تأكيد الشراكة الفعلية بين المؤسسات الرسمية والهيئات الأهلية والمنظمات الدولية ،

أملنا أن نعمل جميعا " لخير الإنسان بتنمية بشرية مستدامة

أن نعمل من أجل الحياة في لبنان

من أجل الحياة على الأرض

والشكر لكم





REPUBLIC OF LEBANON  
MINISTRY OF ENVIRONMENT

**LEBANON**



## CAPACITY 21

### National Programme for Promoting Sustainable Development at the Institutional Level

Agenda 21 is the result of the United Nations Conference on Environment and Development (UNCED) which was held at Rio De Janeiro in June 1992. The implementation of Agenda 21 requires the development of capacities to integrate environment and development. The achievements of sustainable development requires the enhancement of capacities throughout society and across sectors. Development efforts often fail because of lack of an enabling environment ( i.e. human skills, strong institutions and conducive policy or legal framework).

Capacity 21 is a novel and catalytic initiative for change. It is a strategic instrument with the following broad objectives: 1) to assist the integration of principles of sustainable development into national development policies, 2) to assist the involvement of all stakeholders in development, planning and sustainable environmental management, and 3) to create a body of experts in sustainable development.

From an early stage two principles were established by the Capacity 21 Unit for the Global Programme:

- 1- All programmes would be nationally developed with the use of international consultants only as advisors and advocates; and
- 2- Wherever possible, Capacity 21 programmes would be nationally executed to ensure maximum national ownership.

In Lebanon, the programme was well received by the Ministry of Environment who decided to share the funding of the project with UNDP. In August 1997, the Ministry of Environment and the United Nations Development Programme (UNDP) launched Phase II of Capacity 21 project.

## **Objectives of CAPACITY 21 - Phase II**

**\* TO PROVIDE NECESSARY TRAINING, TECHNICAL ASSISTANCE AND AWARENESS PROGRAMMES BASED ON NATIONAL NEEDS ASSESSMENT**

**\*TO ESTABLISH AT LEAST 4 LOCAL AGENDAS 21 FOR MUNICIPALITIES OR CONGLOMERATION OF MUNICIPALITIES**

**\*FOLLOW UP BUILDING LEGAL FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT**

**\*TO ENSURE EFFECTIVE PARTICIPATORY PROCESSES AND NETWORKING AMONG STAKEHOLDER GROUPS**

## **The activities that will be conducted to achieve these objectives**

**\*Implementing immediate training and technical assistance for stakeholder groups, MOE staff, NGOs, CBOs and municipalities to enhance their technical capacities in executing their work.**

**\*Updating and implementing awareness action plan and priority activities.**

**\*Providing necessary technical and financial support to formulate and initiate the implementation of at least 4 local agendas 21 for municipalities within the capacity 21 framework of environmental monitoring and awareness.**

**\*Following up on building legal framework for environmental management by developing application decrees for international conventions and priority sectors.**

**\*Ensuring effective participatory processes and networking among stakeholder groups by establishing networks of NGOs and private sector groups actively involved in sustainable development related activities.**

**\*Facilitating access to financial resources through the establishment of an Environmental Fund to allow NGOs, municipalities and private sector easy access to necessary funds to undertake institutional strengthening and capacity building activities.**

Capacity 21 is managed by a unit hosted at the Ministry of Environment. The team consists of a project manager, a technical advisor, two specialists and United Nations volunteers.

For more information, please contact:

***Capacity 21  
Ministry of Environment  
P.O. Box 70-1091  
Antelias, Lebanon  
Tel: (01)521030/6, Fax: (01) 521037/8***



## CLIMATE CHANGE PROJECT

### **A- Project Description:**

This project builds capacity in Lebanon to fulfill its communication requirements to the UNFCCC (United Nations Framework Convention On Climate Change) and respond to the objectives of the convention on a continuing basis. An important element of the project will be the enhancement of awareness and knowledge among the Government planners and Policy Makers on Climate Change issues and the incorporation of these issues in policy making and development planning of the various sectors.

### **B- Current Achievements:**

The Project has been recently initiated and is in the process of forming a project coordinating committee and will organize in the near future a project initiation workshop.

### **C- Future Plans:**

In order to respond to the UNFCCC :

- 1- The project will prepare a national inventory of Green House Gases (GHG) not included in the Montreal Protocol (mainly CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>), sources and sinks that follows the IPCC (Intergovernmental Panel On Climate Change) methodology.
- 2- In order to regularly update the inventory, an information center and a permanent data collection and data management system will be established.
- 3- The Assessment of the Vulnerability Lebanon's fragile ecosystems, habitat and economies to Climate Change and that of the marine ecosystems to sea level rise. This assessment will be achieved through conducting assessment and adaptation training program for the concerned staff.



4- The assessment of feasible mitigation strategies in the following sectors: Power sector including production and distribution, industrial and residential sectors, transport, agriculture and forestry, waste management and treatment.

5- The final step will be the preparation of Lebanon's first communication which will incorporate inventories, review of ongoing national activities, and mitigation strategies.

#### **D- Helpful Cooperation:**

The Project welcomes any cooperation from interested parties that will facilitate the process of preparation, compilation and consideration of the communications technical assistance in the preparation of the Green House Gases inventory will be very helpful.

On the long - term, a financial support will be necessary to develop a data base center that will respond to the convention commitments (updating the inventories) on a continuing basis.

# مشروع تغير المناخ

## ١- وصف المشروع:

يهدف هذا المشروع الى تنمية القدرات في لبنان من أجل تحضير التقرير الوطني الذي وضعته الاتفاقية الإطارية الخاصة بتغير المناخ (UNFCCC) وإنجاز أهداف هذه الاتفاقية بشكل دائم.

أحد أهم عناصر هذا المشروع هو إدخال مفاهيم التغير المناخي في إطار إتخاذ القرارات في مجال التخطيط في القطاعات المختلفة في لبنان.

## ٢- الإنجازات الحالية:

بدأ مشروع تغير المناخ مؤخراً في أواخر شهر آب ١٩٩٧ ، وهو الآن في طور إعداد لجنة متابعة المشروع التي ستضم ممثلين عن كافة الوزارات والمؤسسات المعنية، وتحضير ورشة عمل للتعريف عن مضمون وأهداف هذا المشروع.

## ٣- الخطط المستقبلية:

من أجل الاستجابة لمتطلبات الاتفاقية الإطارية الخاصة بتغير المناخ سوف يقوم المشروع بما يلي:

أ- تحضير مسح وطني لمصادر إنتاج وإستهلاك الغازات الدفينة غير المذكورة في بروتوكول مونتريال (CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>) عبر إعتداد مناهج الهيئة الحكومية الدولية المعنية بتغير المناخ (IPCC).

ب- تأسيس مركز دائم لجمع وإدارة المعلومات المتعلقة بالمشح الوطني للغازات الدفينة وتحديث مستمر لهذا المشح.

ج- تقييم تأثير النظام الأيكولوجي في لبنان بتغير المناخ وخاصة إرتفاع مستوى البحر الناتج عن هذا التغير.



د- تقييم وإعتماد إستراتيجية مناسبة لتخفيف تركيزات الغازات الدفينة في الجو في القطاعات التالية:

- الصناعة.
- إنتاج وتوزيع الطاقة.
- النقل.
- الغابات والزراعة.
- إدارة النفايات ومعالجتها.
- المباني السكنية.

ه- أما الجزء الأخير من المشروع سوف يكون تحضير التقرير الوطني الأول (First National Communication) للبنان الذي سيتضمن المسح الوطني، تأثير النظام الإيكولوجي بالتغير المناخي، وإستراتيجية تخفيف الغازات الدفينة كجزء أول من التزام لبنان بالإتفاقية الإطارية لتغير المناخ (UNFCCC).





Republic of Lebanon  
Ministry of Environment



American University  
of Beirut

Conference:

**MINISTRY OF ENVIRONMENT**

***ANEW VISION, A NEW OUTLOOK***

Unit of Planning and Programming

Presented by:

Dr. Naji Chamieh  
(World Bank)

September 30, 1997  
Issam Fares Hall, AUB

## **UNIT OF PLANNING & PROGRAMMING**

Ministry of Environment

The Unit of Planning and Programming (UPP) was established July 1997 at the Ministry of Environment (MOE) under a grant from the Mediterranean Technical Assistance Program (METAP). The unit, managed by the World Bank, conducts planning/programming activities and develops environmental project briefs for financing.

An Environmental Strategy Framework (ESF) Paper, prepared by the World Bank in cooperation with the MOE, estimated the annual cost of environmental and natural resources degradation in Lebanon to be over US\$ 300 million per year divided in three sectors: human health, natural resources, and economic loss. This cost could be alleviated through the implementation of a set of environmental policy options and major recommendations, listed in the ESF, and pertaining to the following fields: Institutional, Policy/Regulations, Economic Incentive, Investment, and Information Monitoring Studies. The Environmental Strategy Framework will be submitted to the Council of Ministers for adoption, before the end of the year.

From the ESFs' policy options and recommendations, the UPP is preparing an Environmental Project Data Base accessible through MOE's Web site early 1998. The ESF Project Data Base is a tool to disseminate environmental information to Ministries and donor agencies, and to identify new environmental projects. Its use will minimize duplication and overlapping of environmental projects, identify zones of interventions with no environmental implementation, and support decision making.

The UPP will enhance the capability of MOE to assess rapidly the pollution situation in specific geographic locations and to analyze alternative pollution control strategies and policies by the use of a Decision Support System (DSS) Model for Industrial Pollution Control. The DSS, developed by the World Bank, will enable MOE to estimate: air, water, and solid waste emissions, ambient concentrations of air and water pollutants, total costs of control options, and long-run marginal cost schedule to achieve a certain level of emission reduction for a chosen pollutant.

The UPP will initiate a coordination mechanism between the MOE and other agencies such as: Ministries, CDR, European Community, UN Agencies, World Bank, Universities and Research Centers, and other Funding agencies. This coordination mechanism will include holding regular meetings, use of electronic mail, Internet access of home pages, and publishing newsletters. This coordination mechanism would ensure a better and efficient communication system to develop and implement new environmental projects.

The Unit of Planning and Programming will also conduct training seminars in policy planning and programming, conduct feasibility studies in energy projects relating to solid waste, and review the Environmental Code and Environmental Impact Assessment Guidelines.



Republic of Lebanon  
Ministry of Environment



American University  
of Beirut

Conference:

**MINISTRY OF ENVIRONMENT**

***A NEW VISION, A NEW OUTLOOK***

**The Role of Information Technology at MOE**

**Presented by:**

**Dr. Fadi Chehayeb  
(Sector Implementation Unit #3)**

**September 30, 1997  
Issam Fares Hall, AUB**

1 □ The Role of Information Technology at MoE

Fadi Chehayeb

Ministry of Environment, Lebanon

SIU-3

2 □ What is Information Technology

- Data Storage, Communication, Organization
- Information and Processes
- Computer Technology vs. Paper Based Operations
- Costs and Benefits

3 □ Information at the MoE (1)

- Types of Information:
  - Administrative
  - Operations
  - Environmental
- Research and Draft Standards

4 □ Information at the MoE (2)

- Partnership w. Donor Organizations
- Involvement with Other Government Organizations
- Qualified Personnel
- Currently Small Size

5 □ Technology Options (Hardware)

- Mainframes
- Standalone PCs
- Networked Solutions

6 □ Technology Options (Software)

- Centralized Database
- Distributed Applications
- Graphical User Interface (GUI)
- Business Engineering

7 □ MoE Applications (1)

- Fund Accounting
- Asset Tracking
- Personnel Management
- Contact Management
- Internal Communication (E-mail)

8 □ MoE Applications (2)

- Incoming Request Tracking
- Industrial Inspection Reports
- Project Tracking
- Environmental Database
- Library Management

9 □ Hardware and Software Platform

- LAN Across MoE
- NT Server with Central Database
- Windows-95 Clients
- The Internet

10 □ Implementation Plan

- Initial Needs Assessment
- Upgrade Hardware Platform
- Choose Database
- Prioritize Applications
- Development, Installation, Training, Support

11 □ Implemented Applications

- Request Registration and Tracking
- Contact Information Database
- Industrial Inspection Reports
- Internal E-mail and Memos

12 □ IS in the Future

- Move Local Platform to Intranet
- Environmental Information Center (GIS)
- Using Internet as Communication Tool
- Integration of Operations Across Other Organizations



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Conference:

**MINISTRY OF ENVIRONMENT**  
***ANEW VISION, A NEW OUTLOOK***

Sustainable Development Networking Programme:  
Overview and Progress

Presented by:

Mr. George Akl  
(United Nations Development Programme)

September 30, 1997  
Issam Fares Hall, AUB

# SDNP

Sustainable Development Networking Programme

Overview and Progress

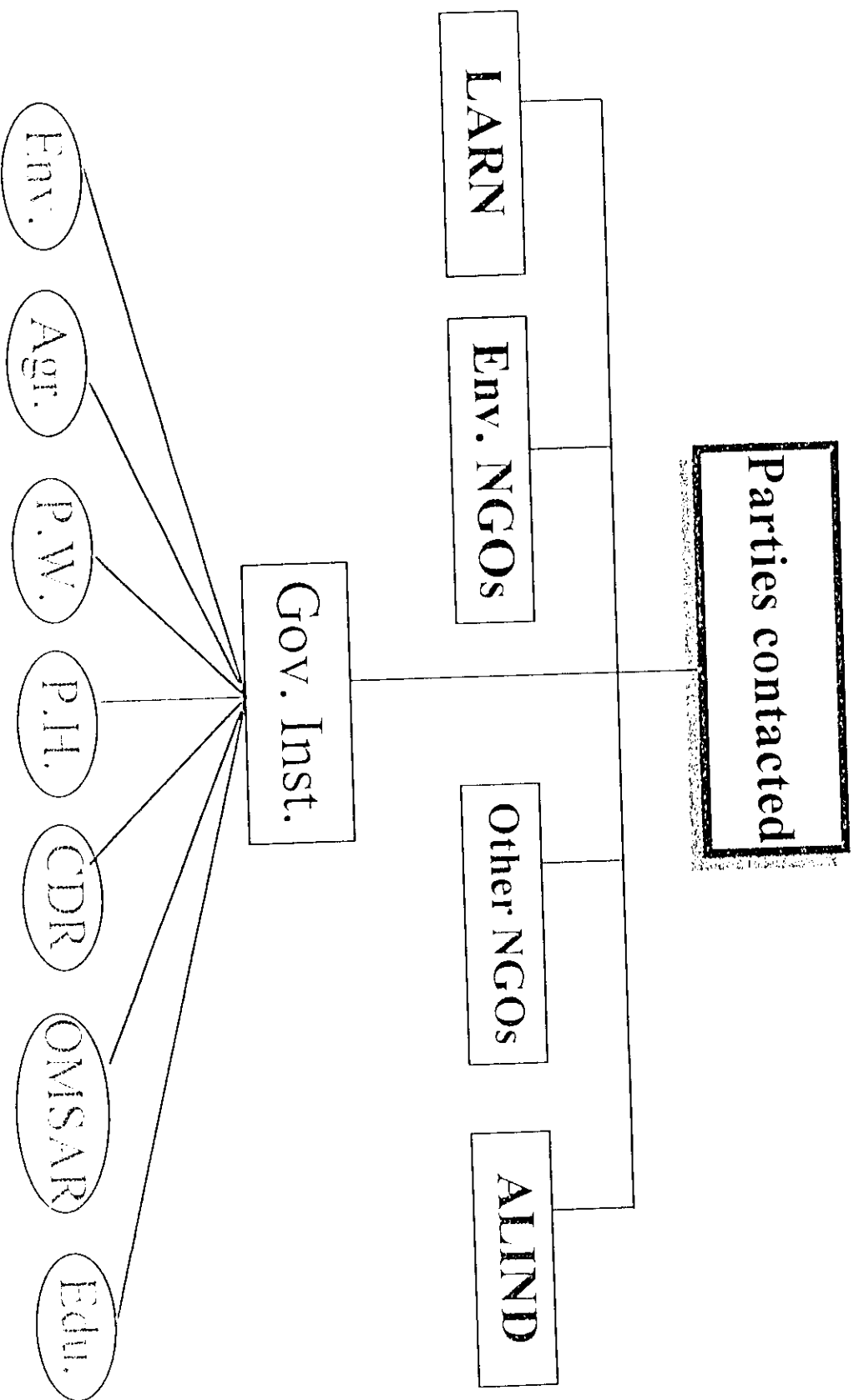
# Main Objectives

- ◆ Access to Information
- ◆ Integration between Sources
- ◆ Coordination and Sharing of Knowledge
- ◆ Information Dissemination
- ◆ Capacity Building

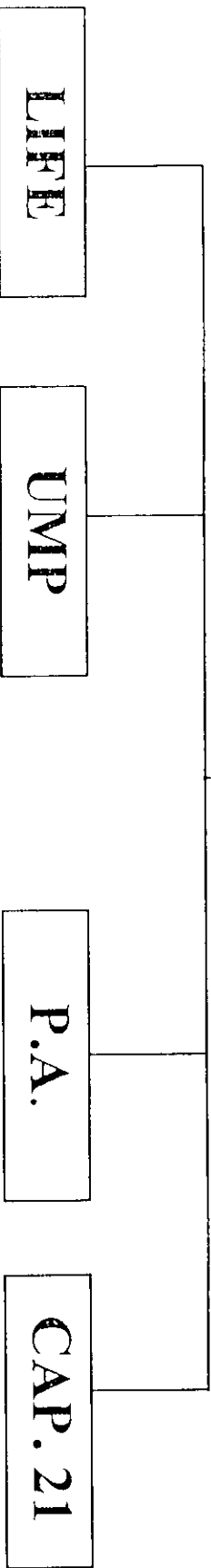


## SDNP's Activities

- Raise awareness about information sharing.
- Encourage users to connect.
- Train users on searching and using the Internet.
- Help users to develop local contents on local issues.
- Encourage Partners to be users as well as providers of Information.



**Coordination with  
ongoing Projects**

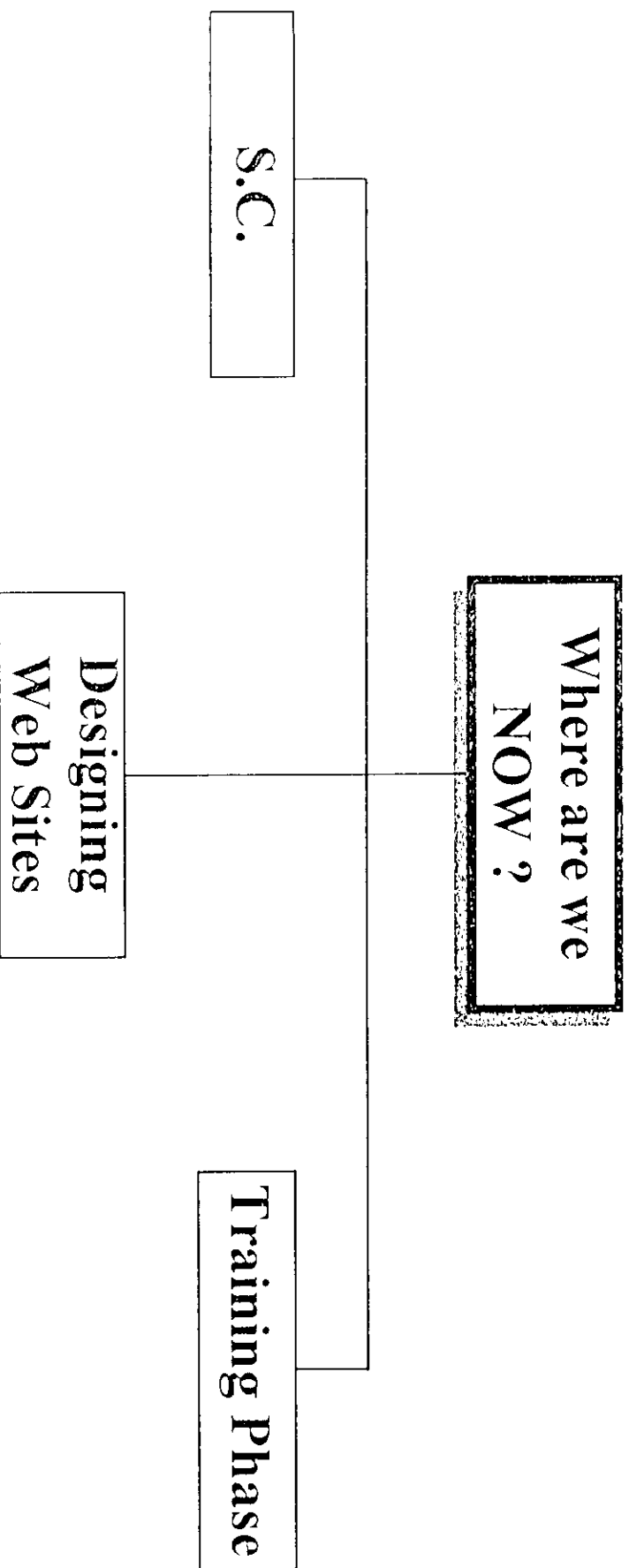


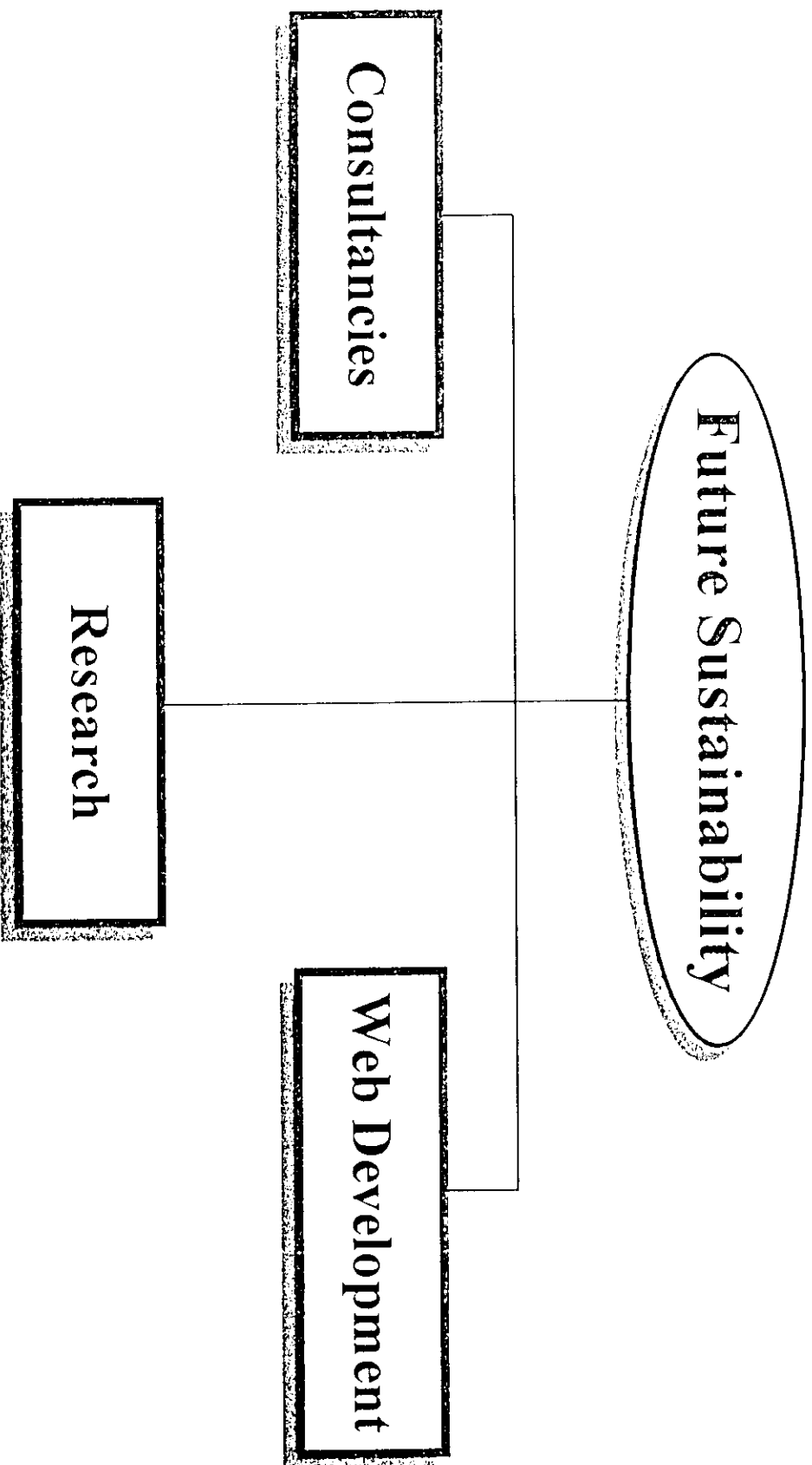
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Republic of Lebanon  
Ministry of Environment



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of Beirut

Conference:

**MINISTRY OF ENVIRONMENT**

***ANew VISION, A New OUTLOOK***

Technical and Policy Support Program

Presented by:

**Dr. Satae Arnaout**  
(Sector Implementation Unit #3)

September 30, 1997  
Issam Fares Hall, AUB

*Technical & Policy Support Program at the Ministry of Environment  
implemented by  
the EU funded Sector Implementation Unit-3*

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COMPONENT	
<b><u>1. TRAFFIC AIR POLLUTION</u></b>	
1.1 Automotive fuel strategies for clean air in Lebanon: lead phasing out and diesel fuel policy	
1.2 Development of a traffic emission simulation model and an air emission monitoring program for the Greater Beirut Area.	
<b><u>2. HAZARDOUS WASTE MANAGEMENT</u></b>	
2.1 Options for waste oil management in Lebanon	
<b><u>3. ENVIRONMENTAL RISKS AND EMERGENCY PREPAREDNESS</u></b>	
3.1 Development of an environmental emergency response plan for the Caza of Metn	
<b><u>4. LEGISLATIVE FRAMEWORK</u></b>	
4.1 Develop the Environmental Code for Lebanon	
4.2 Develop the Environmental Impact Assessment (EIA) Procedures for Lebanon	



Republic of Lebanon  
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Conference:

**MINISTRY OF ENVIRONMENT**

***ANew VISION, A NEW OUTLOOK***

**Role of Protected Areas Project in  
Promoting Peace in Lebanon**

**Presented by:**

**Mr. Faysal Abu Izzeddin  
(United Nations Development Programme)**

**September 30, 1997  
Issam Fares Hall, AUB**



THE ROLE OF THE PROTECTED AREAS PROJECT  
IN PROMOTING PEACE IN LEBANON

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1 September, 1997

ABSTRACT:

Records dating back to 2500 BC indicate that forests covered most of Lebanon. Today less than 5% of the country is forested, and as we approach the twenty-first century there is a growing national consensus for the need to conserve what remains of the unique flora and fauna. For the first time voices are being heard that promote nature conservation as a vital part of development. Suggestions are also being put forward that link nature conservation with national reconciliation in Lebanon.

The main objective of the GEF financed UNDP/IUCN Protected Areas Project is to strengthen national capacity by working with Lebanese government institutions, NGOs, and individuals to enable them to effectively manage nature reserves where, through in-situ protection, wildlife will gradually restore itself.

In addition to the objectives of biological conservation, there is a less publicized objective of promoting national reconciliation in a country that recently suffered two decades of civil war. Such a reconciliation is a necessary step on the road to achieving lasting peace in Lebanon, and the Protected Areas Project is playing its role by bringing men, women, and children together from all the regions that suffered pain and anguish during the bloody civil war.

The question of whether conservation of a common natural heritage can help the Lebanese to resolve their political differences will need time to answer. The indicators look good, but much depends on the success of the Protected Areas Project which is still in its infancy. There is a growing conviction that with the establishment of well managed national parks and nature reserves a conservation ethic will grow, and that the ethic will manifest itself in a compassionate attitude of Lebanese towards nature and towards each other. This change of attitude will play an important role in promoting peace in Lebanon.

## 1- INTRODUCTION

Lebanon has an estimated population of about 3.5 million and an annual population growth of 2%. About 65% of the total population is concentrated in eight principal urban areas. It has traditionally been a haven for Arab capital and has acted as an open route for trade between east and west. Before 1974 it enjoyed a long period of rapid economic growth and financial stability.

Lebanon is a small country in area, 10,450 sq. km., and represents a typical eastern Mediterranean climate with two mountain ranges running from north to south creating a number of varied and rich habitats. All the habitats and the species they harbor are at risk because of the lack of proper enforcement of existing laws that protect forests and their wildlife.

In fact, the issue of over-exploitation of natural resources in Lebanon is thousands of years old, and the urgent need to conserve the remaining forests and wildlife is a vital part of the future of the country if it is to promote national reconciliation, maintain its ecological balance, achieve sustainable development, and regain its touristic attraction to visitors from around the world.

Today less than 5% of Lebanon has a forest cover compared to 15% or more at the turn of the century. Records dating back to 2500 BC indicate that forests covered most of Mount Lebanon. Numerous ancient inscriptions are full of references to the "cedar forests" and their diversity of flora and fauna. A good example of this was the visit by the Roman Emperor Hadrian to Lebanon almost two thousand years ago. He was shocked to find that most of the cedars and pines had been cut, and he ordered that stone inscriptions be placed around the remaining forests declaring them as "imperial domain". It may well be one of the first written conservation laws in the history of mankind.

The exact loss of species as a result of the destruction of these forests may never be known, however, it is clear that their absence has robbed the country of much of its intrinsic beauty and left Lebanon with a landscape that is quickly turning into a desert. However, despite this loss of biodiversity Lebanon continues to have thousands of species of flowering plants many of which are endemic, hundreds of species of birds that migrate over Lebanon, numerous species of mammals, reptiles, insects, fish and mollusks.

The massive building boom that sprang up after the recent civil war is accelerating the rate of environmental destruction across the country. Contractors demand and receive access to diminishing water supplies, concrete, stone and sand with little or no regard to the environment. Factories pump their poisonous wastes into the sea, noxious fumes fill the air, garbage is dumped along the coast, trees are cut for firewood and charcoal, livestock graze eroding slopes, and migrating birds continue to be shot in the thousands.

## 2- TWO DECADES OF WAR

From 1974 to 1990 Lebanon suffered a violent and bloody civil war which resulted in tremendous loss of human lives, massive destruction of property, reduction of productive capacity, and fragmentation and weakening of the central authority. In economic terms Lebanon's gross domestic product dropped from US\$ 2,250 in 1974 to US\$ 825 in 1990. As an example, tourism was considered an important source of revenue for the country, but as a result of the security situation it was drastically reduced.

In the absence of effective government institutions during the war, the task of speaking out against the deteriorating environmental conditions was left up to concerned citizens, on all sides of the conflict. They established a number of NGOs for conservation of the environment and distinguished themselves by operating under dangerous war-time conditions. Their activities led to increased awareness and the enactment of a number of important laws and decrees. The most active of these NGOs were the Society for Protection of Nature in Lebanon (SPNL), Friends of Nature (FON), Environmental Protection Committee (EPC), and Green Line (GL).

It is important to note that the twenty years separating the 1972 UN Conference on the Human Environment and the 1992 UN Conference on Environment and Development witnessed very significant advances in dealing with global environmental issues. Unfortunately for Lebanon, those same two decades witnessed the destructive civil war that threatened its very survival. Now that stability has been restored, Lebanon is faced with many environmental difficulties and is looking to the global community for help in dealing with them.

Fortunately, Lebanon has entered a number of agreements and legal obligations relating to the environment. It ratified the World Heritage Convention on 3 Feb. 1983, the Convention for the Protection of the Mediterranean Sea against Pollution on 18 May 1983. Lebanon signed the Convention on Biological Diversity on 12 June 1993 at the time of the UN Conference on Environment and Development in Rio de Janeiro and ratified it in 1994.

It was shortly before the Rio Conference that Lebanon enacted Law No 216 of 2 April 1993 which created the Ministry of Environment (MOE) and entrusted it with the task of proposing legislation, coordination and oversight on matters relating to the environment. Shortly after its establishment the MOE identified conservation of biodiversity as one of its areas of priority, and requested the UNDP Office in Lebanon to prepare a study for the establishment of protected areas for possible financing by the Global Environment Facility (GEF) through the United Nations Development Programme. The World Conservation Union (IUCN) was commissioned to prepare the Project Proposal which, after review by all the parties, was approved by the GEF Council as Project Document LEB/95/G31/A/1G/99 and awarded \$2.5 million over a period of five years.

### 3- THE PROTECTED AREAS PROJECT

Project LEB/95/G31/A/1G/99 - Strengthening of National Capacity and Grassroots In-Situ Conservation for Sustainable Biodiversity Protection, commonly known as the Protected Areas Project, commenced its work on 15 November, 1996 and is located at the Ministry of Environment. The Project is focusing its resources on establishing and managing three demonstration nature reserves in active partnership with the Ministry of Environment, NGOs and scientific institutions.

Although there are dozens of important areas in Lebanon that should be managed as nature reserves only three were selected for inclusion in the Project, Al-Shouf Cedar Reserve, Horsh Ehden Reserve, and Palm Islands Reserve on the grounds of their legislative standing, location and level of biodiversity.

To achieve the Project's major objectives of biodiversity conservation and capacity building the following major activities are already being implemented:

1- Conserving endemic and endangered wildlife and their habitats by establishing a coordinated system of protected areas, beginning with Al-Shouf Cedar Reserve, Horsh Ehden Reserve, and Palm Islands Reserve, and through this process introducing wildlife conservation as an integral part of sustainable human development.

2- Creating an institutional capacity for the NGOs directly responsible for the management and protection of the reserves, wherein each nature reserve is provided with its own management team, management plan and continuous on-the-job training of staff.

3- Strengthening institutional capacity of Government agencies to regulate and oversee the overall management of the reserves, and of scientific institutions to study the natural resources and monitor the conservation efforts at these reserves and elsewhere.

4- Gathering, analyzing and storing an accurate body of information that include species surveys, socio-economic studies and monitoring programmes that utilize GIS/GPS mapping systems to analyze results, and list, quantify and locate flora and fauna within the reserves.

5- Mounting an effective Awareness Campaign utilizing a series of video introductions and slide presentations designed to highlight the importance of biodiversity conservation, support fund raising activities, and alert government and public sectors to the urgent need for protecting wildlife.

6- Strengthening national reconciliation by bringing people and institutions together from different regions for the protection of nature.

#### 4- THE NATURE RESERVES

##### AL-SHOUF CEDAR RESERVE

Al-Shouf Cedar Reserve represents a mountainous ecosystem on the slopes of the central portion of the Mt. Lebanon chain. The eastern slope faces the southern Bekaa valley and overlooks the Ammik swamp. The western slope faces the Shouf region of Mount Lebanon. It is made up of a series of peaks parallel to the sea and their altitude varies from 1200 to 2000 meters. Al-Shouf Cedar Reserve has the largest self propagating stand of Cedars and is located at the southern-most limit of this tree's growing range. It is one of the last remaining areas in Lebanon where larger mammals such as the wolf and wild boar can still be found, and where the ibex and mountain gazelle can be reintroduced.

A protected area in the Shouf region will be an asset to the community because a) the park is situated in the higher cedar zone and is not inhabited by anyone and therefore poses no threat to the inhabitants or their farming activities, b) the villagers will become active participants in the planning and management of the park through their local NGO, the Al-Shouf Cedar Society.

##### HORSH EHDEN RESERVE

Horsh Ehden Reserve represents a mountainous ecosystem on the elevated slopes of the northern Mt. Lebanon chain (1300-1950 meters) in the Governorate of North Lebanon. The area is 280 hectares, however more communal contiguous land that is owned by the municipality could be added at a later date to expand the forest to 700 hectares. During the last hundred years the terrain was inaccessible which spared the forest from heavy logging.

The inhabitants of the town of Ehden are summer residents who traditionally maintain winter homes in the town of Zgharta near the coast. It is predominantly a residential community with shops and services to cater to the residents and vacationing tourists.

##### PALM ISLANDS RESERVE

The Palm Islands represent an eastern Mediterranean marine island ecosystem and is made up of the Palm, Sanani and Ramkine Islands. The islands and surrounding water constitute an integrated natural marine basin with a surface area of 5 km<sup>2</sup> off the coast of the city of El-Mina, which is the harbor section of the city of Tripoli. The Islands are important bird resting and nesting areas for migrating and indigenous birds; and are rich in wild flowers.

As a result of the uncontrolled use of these islands the wildlife, both flora and fauna, have suffered tremendously. People have also been adversely affected, particularly the fishermen. Increased tourism to and around the islands will provide the fishermen with added income as they ferry people back and forth under the guidance of the park rangers responsible for the islands.

## 5- PROMOTING PEACE IN LEBANON

National reconciliation is an intangible, but nonetheless real, component of the Protected Areas Project. It is a difficult parameter to measure when it is considered on its own. However, its impact can be partly measured by studying the progress of a number of Project activities and estimating their effect on national reconciliation and hence peace in Lebanon.

### 1- Visiting the Reserves

The fragmentation of the country during the civil war prohibited the movement of men, women and especially children, from one area to another. As a result an entire "war generation" of Lebanese do not know each other and are not familiar with many regions of their country. Mending the fragmentation of the country by bringing people together from all the different areas of Lebanon and reintroducing them to their natural heritage through properly organized and guided tours in the nature reserves will be the Project's primary contribution to national reconciliation.

### 2- Appointing Local NGOs

Appointing local NGOs to plan, protect and manage the nature reserves was a calculated move designed to promote national reconciliation by diffusing tensions and minimizing unwanted friction between opposing factions in Lebanon. This safeguard was incorporated early into the project to ensure that management practices are fully compatible with local political, social and religious institutions.

### 3- Bringing Institutions Together

National reconciliation will be enhanced by bringing institutions together so that Government, NGOs and scientific institutions will work together to establish a network of nature reserves that are surveyed, studied and monitored according to internationally recognized standards. This is the first time that such a wide array of people will work together for the conservation of nature.

### 4- Allowing Ideas and Solutions to Interact

By approaching the problem of national reconciliation from the perspective of people, communities and institutions, and by allowing ideas and solutions to be brought together on many different levels through the a peaceful activities of nature conservation, the chances of a successful outcome are enhanced. Any other approach could arouse animosities that lead to conflicts.

### 5- Upgrading the Role of Women

Women constitute the largest segment of active conservationists in Lebanon today and they, more than men, deplore the destruction of all living resources in the country. Their major contribution to the educational, public awareness and field research components of this conservation project cannot be exaggerated, nor for that matter their role in promoting peace.

### 6- Increasing International Financial Support

International recognition and financial support for Lebanon from the developed nations of the world can help a great deal in furthering national reconciliation. This is possible if Lebanon chooses to provide safe shelters for all birds, both migrants and residents, and the government supports efforts to impose a five year hunting moratorium throughout Lebanon. The global impact of protecting the migrant birds would be immediate. It would be felt in Europe, Asia and Africa where their numbers will increase. The benefit of this to Lebanon would be the gratitude of many nations in the world who would consider with favor the financial requests from Lebanon.

### **6-- TRANSBOUNDARY PROTECTED AREAS**

The advantages of transboundary protected areas for Lebanon cannot be denied, especially when it impacts positively on conservation of biodiversity. The desirability of transboundary protected areas was raised during a working meeting of the Syrian Minister of State for the Environment and the Lebanese Minister of Environment, and their respective staff, in Damascus on 9 March 1997. After the issue was introduced, a discussion followed that reviewed the desirability of such a venture. A decision was reached that cooperation and studies are needed for establishment of such transboundary protected areas. The subject was again raised, and its potential confirmed, during a follow-up meeting of the two Ministers in Beirut on 13 June 1997.

At this point in time it is not practical to expect that either Syria or Lebanon are ready to establish transboundary protected areas. The meetings of the Ministers allowed us to introduce the subject, not only to the Ministers but to their staff as well. The subject will enter the realm of implementation when each of these two countries has its own functional network of protected areas. Lebanon is now on its way to establishing such a system of parks and reserves, and Syria is in the early stages of doing the same.



Republic of Lebanon  
Ministry of Environment



American University  
of Beirut

Conference:

**MINISTRY OF ENVIRONMENT**

***A NEW VISION, A NEW OUTLOOK***

**Lebanon's New Solid Waste Policy**

**Presented by:**

**Mr. Ignacio Manzanera  
(Sector Implementation Unit #3)**

**September 30, 1997  
Issam Fares Hall, AUB**



# **SOLID WASTE MANAGEMENT NEW POLICY**

**By: I. Manzanera ME, CCC, MBA**

As a request from Minister Akram Chehayeb on January 22<sup>nd</sup> 1997, the Lebanese Council of Ministers approved a new solid waste management policy for the country based on Integrated Solid Waste Management whereby, emphasis will be made on waste minimization and recycling to avoid landfilling and incineration as possible.

## **Source Reduction Planning and Infrastructure.**

Planning is central to developing effective source reduction programs. Before source reduction planners start developing specific source reduction initiatives for their communities, it is extremely important that they know what they are trying to reduce, how much reduction they want to achieve, and how they will measure their results.

Municipal solid waste plans need to include an explicitly stated source reduction policy, clearly defined goals, and meaningful measurement strategies. Without these, planners will have difficulty evaluating the effectiveness of their program.

Implementing a source reduction program also involves developing an infrastructure to support it. Specifically, an effective program requires independent leadership, authority, appropriate staffing, and an adequate budget.

Source reduction policy. The first step in planning for source reduction is a clear statement of policy, including a definition of terms that clarifies what source reduction means so that it can be differentiated from other waste management options, such as recycling.

In other words, instead of a policy of "diversion from landfills," which leaves ambiguity as to whether the strategy should be source reduction, recycling, or (in some cases) incineration, a clear policy would state explicitly that its aim is source reduction, include definition of that term, and then specify goals and measurement methodology.

## **Setting Source Reduction Goals and Establishing Measurement Methodologies.**

The next steps in source reduction planning are setting goals and establishing measurement methodologies. Goals and measurement systems are important for effective source reduction programs because they help communities establish program priorities, track and evaluate progress, and recognize accomplishments and target areas for further efforts.

To most effectively set goals and establish measurement methodologies, communities need to take four steps.

1. Establish an overall source reduction goal that is separate from the recycling goal with specification of:
  - The baseline year
  - Target year
  - Type reduction to be measured (from the current total waste generation levels, from current per capita generation levels or from the projected increase)
2. Determine separate goals desired for:
  - Generating sectors (residential, commercial, and institutional)
  - Materials (paper, glass, plastics, organics, etc.)
  - Products (Styrofoam cups, glass bottles, tires, cardboard boxes, newspapers, etc.)
3. Select unit of measurement:
  - weight
  - Volume
  - Weight and volume (preferable if possible)
4. Select measurement methodology:
  - Waste audits
  - Sampling (including weighing-in places such as transfer stations)
  - Surveys
  - Purchases (tracking sales)

### **Information Needs for Measuring Source Reduction.**

Good data collection is vital for measuring source reduction, since communities need to know which types of waste materials, and how much they are generating. Thus, at a minimum, communities need to collect data on:

- Amount of residential waste
- Amount of commercial Waste
- Residential population
- Total employment
- Projections of population change
- An index of economic activity

## **The Importance of Waste Composition**

Knowledge of the composition of the waste stream is very helpful in setting realistic goals because it allows communities to set source reduction priorities. Materials can be targeted for source reduction if they constitute a major proportion of the waste stream, are easy to reduce, or are major contributors to pollution during disposal, since the waste stream varies from community to community, in-depth information about it requires a waste audit - an actual sampling of waste generated to determine its composition by material, product, and generating sector.

Yard waste, for example, is a good target for source reduction. When burned, it creates emissions of nitrogen oxides (Nox); and it can quite readily be reduced through backyard composting. A suburban community with a large proportion of yard waste can set a higher overall source reduction goal than a densely populated city with small proportion of yard waste.

## **Administration and Budget**

Departments charged with managing solid waste have traditionally been staffed by officials knowledgeable primarily about waste disposal and, more recently, about recycling. Their responsibilities have been the collection, transport, and disposal of waste, and the processing and marketing of recyclable materials. Their key concerns have been diminishing disposal capacity, siting new facilities, and controlling costs.

Implementing source reduction programs involves vastly different staff skills and concerns. It requires staff with broader, long-term view of the use of materials in society and an understanding of how behavior can be changed to optimize the use of resources and minimize the waste generated.

Staff members need diverse skills so they can work on planning, program development, technical assistance, education, outreach, legislation, data collection, program evaluation, waste audits, and enforcement. Their concerns must encompass broad issues ( such as impacts on economic development ) that go well beyond questions of how to manage garbage.

## **Administration**

Efforts to provide independence and authority for source reduction are essential if it is to become a viable policy option. For the most effective administrative structure, source reduction would be separate from and independent of waste management functions.

The head of the source reduction effort would have authority at least equal to that of the individuals in charge of recycling and disposal, and would have a commitment to minimizing the amount of materials actually entering the waste stream.

Source reduction is much broader in scope than recycling or disposal and is in fact, resource management rather than waste or material management. That is, it involves decisions about what products and packages are made, how they are made, and how they are used.

An effective source reduction program deals with producers, distributors and consumers. It can thus be argued that source reduction does not belong in sanitation or solid waste departments at all, and should not be a function of waste managers.

Theoretically, it might make more sense to place source reduction activities in a department of economic development. On a more practical level, however, the motivation to promote source reduction is generally the need to reduce waste, so it is likely to remain in the purview of solid waste departments.

If source reduction functions are placed in a solid waste department, they need some independence from the recycling functions because the immediate, everyday demands of recycling can tend to overwhelm the long-term, more complex source reduction activities.

Larger budgets and more personnel are required for recycling because it includes collection, processing and marketing; the scale and urgency of these management tasks may result in eclipsing the attention given to source reduction.

Despite the virtually universal endorsement of source reduction as the top priority, in no instance has anybody found an administrative structure that reflects this, in terms of either independence or authority.

### **Budget**

Source reduction does not require the costly collection and processing operations involved in waste management option, but it is not free and it cannot be accomplished without an adequate budget.

The costs of source reduction are in the form of an up-front investment in data collection, waste audits, legislative development, education, technical assistance, equipment and planning.

Prevention programs become increasingly cost-effective as prevented percentages increase. The reason for this is that larger prevented tonnages allow relatively greater reductions in truck shifts and facility capacity; conversely, when reductions are smaller. Fewer savings are captured through reduced collection and facility costs.

A barrier to funding source reduction is that results may not happen immediately, so there may be no return on the budget year in which the expense is incurred. In order to assure continual and adequate funding, source reduction could be funded from a designated income stream.

This might be a portion of the funds raised from charging residents for the amount of waste disposed or other waste collection fees, environmental taxes or fees, or possibly unreturned beverage container deposits.

Source reduction could also be funded as a specific percentage of a recycling budget. For instance, if 5 percent were chosen, a recycling budget of \$10 million would mean source reduction would be allocated \$500,000.

### **Specific Source Reduction Initiatives**

The potential for source reduction is enormous. Virtually every individual and every organization can play a role and become part of the solution to the nation's solid waste problem. The strategies discussed here all relate to reducing the amount of waste reducing.

The Ministry of Environment (MoE) has identified dozens of examples of source reduction initiatives that are already successfully reducing waste. they come from every sector of our society; state and local government; businesses of all sizes; public institutions such as schools, hospitals, and parks; citizens groups; individual consumers; and non-profit organizations.

These specific successful programs are described in detail in making less garbage, and some are summarized here.

For ease of reference, these initiatives can be organized into six categories:

1. Government source reduction programs (procurement and operations)
2. Institutional source reduction programs
3. Government assistance programs (technical assistance, backyard composting and leave-on-law assistance, grants, pilot programs. Clearinghouses, awards and contests, and reuse programs)
4. Education (in households and in schools)
5. Economic incentives and disincentives (variable waste disposal fees, taxes, deposit, and refund systems, tax credits, and financial bonuses)
6. Regulatory measures (required source reduction plans, labeling, bans, and packaging)

### **Government Source Reduction Programs.**

Government -federal, state, or local-employs one out of every eight workers in Lebanon, a total of 0.5 million people. Successful efforts to reduce the waste generated by this work force not only could have a great impact on the municipal solid waste stream but could also provide a model for business, institutions, and consumers.

Exact figures on how much waste government workers produce are not available. However, given that the non-residential sector generated about 3 thousand tons of waste in 1996, it can be estimated that government generated approximately 400 tons of waste annually.

As part of this total, government agencies generate many tons of office paper waste each year, it easily might be over 20 percent of all paper waste from offices throughout the country.

Strategies for implementing source reduction in government agencies (as well as businesses) fall into two main categories; (1) changing procurement policies and (2) modifying operations.

#### **Procurement.**

Government purchases of goods and services account for approximately 35 percent of the gross national product. Hence government as a whole has great power as a customer.

Changes in government procurement policies to favor source reduction could have impact both within and beyond government (1) by reducing the amount of waste generated by the government; (2) by setting an example for the private sector; and (3) by encouraging manufacturers to develop less wasteful products and packages which would then be available to all purchasers.

Procurement guidelines could require the purchase of reusable, refillable, repairable, more durable, and less toxic items.

They could also require minimal and reusable packaging. Such policies would not only reduce waste but would in many cases save money by reducing purchasing, mailing, and disposal costs.

The MoE is producing a guidebook and training program for Government officials to teach about source reduction. It has also completed an assessment of energy usage of certain equipment, and plans to start an analysis of cost vs. waste issues for Government purchases.

The MoE is preparing a procurement model which includes routinely reviews of its purchasing criteria to encourage the purchase of durable, reusable, and repairable items. The proposal is also including the promotion of buying used or surplus equipment.

A system of life-cycle costing proposed by MoE is helpful in comparing the costs of durable and reusable products with the costs of disposables, because it assesses the annual cost of products over their useful life.

There is an abundance of opportunities for reducing waste through procurement policies. Some additional options are:

- Setting a price preference for reusables, refillables, durables, and equipment that reduces waste, such as double-sided copy machines
- Requiring companies that ship goods to government agencies to package them in reusable shipping containers and/or to take back the packaging; for example, furniture that can be delivered in reusable shipping blankets
- Negotiating for longer and more comprehensive warranties and service contracts when purchasing durable goods
- Leasing equipment instead of buying it to provide manufacturers with an incentive to keep it in durable goods.
- Purchasing items that can reduce paper use, such as double-sided photocopy machines and laser printers and equipment and computer software that permits faxing a computer to reduce printouts.

### **Government Operations.**

Government operations could also be changed to promote source reduction. For example, government offices with lawns and campuses can compost yard waste on site and leave grass clippings on lawns.

Employees can be educated to reduce paper use and reliance on disposables, and to reuse materials that they might otherwise discard, such as paint. Government agencies can begin source reduction programs on their own, or they may be mandated by a mayor or governor.

Office paper is an excellent candidate for source reduction in government agencies as well as all businesses. It is an important segment of the waste stream, and organizations have a relatively high degree of control over its use and disposal.

A good example of reducing paper waste comes from AT&T which has a company goal of decreasing paper use 15 percent by 1994 from 1990 levels. AT&T estimates annual paper savings, if double-sided copying is increased to 50 percent, of 77 million sheets of paper. This will reduce annual purchasing costs by \$385,000.

Some paper reductions can be achieved solely by increasing double-sided (duplex) photocopying. Even greater reductions can be made by also reducing the number of copies made and increasing the intensity of use. A document that is double-spaced and single-sided uses four times as much paper as a document that is single-spaced and double-sided (duplexed). Some additional strategies for reducing paper and waste include:

- Eliminating fax cover sheets
- Editing and careful proofreading on the computer before printing
- Storing files in computer disks
- Loading laser printer paper trays with paper used on one side for drafts
- Reducing direct mail by targeting audiences as narrowly as possible
- Using small pieces of paper for short memos

### **Institutions.**

Institutions-organizations such as correctional, health care, educational, and cultural facilities - can also play significant roles in reducing the municipal solid waste stream. Local governments could advance institutional source reduction by implementing programs in the facilities they operate and by encouraging privately run institutions to replicate these efforts.

A variety of source reduction programs can be implemented in correctional facilities, schools, and hospitals around the country as pilot projects to prove their value.

Hospitals can:

- Switch from disposable corrugated cardboard boxes and disposable bag liners to reusable container to hold and ship regulated medical waste for disposal. New contracts must require caters to supply and clean the reusable containers.
- Replace paper towel dispensers with hot air dryers
- Reduce use of disposable linens and disposable food service items in patient rooms
- Establish a product packaging evaluation committee. The goal of the committee will be to change purchasing practices and warehouse product handling procedure to reduce waste. The committees will also be responsible for developing reduce packaging criteria.
- Convert cafeterias to reusable tableware



In addition, improper ordering methods and hoarding often result in perishable products becoming outdated and thrown out before being used.

### **Government Programs to Stimulate Source Reduction.**

Government can play an important role in motivating the private sector (businesses and residents) and helping to develop programs to reduce waste. Strategies to achieve this include technical assistance in conducting waste audits; assistance to businesses and residents for backyard composting, grants, pilot programs, clearinghouses, awards and contents and sponsorship of reuse programs.

### **Technical Assistance, Waste Audits, and Materials Assessments.**

Technical assistance programs are designed first to help business recognize opportunities for waste reduction measures, and then to implement them. In addition, government publicity about successful money-saving source reduction programs can encourage innovation by other businesses.

The first step in any business source reduction program is conducting a waste audit and materials that end up in the trash can or recycling bin. The materials assessment or procurement audit identifies the supplies, food, and other materials purchased by the company and its employees that are brought into its facilities.

This allows an analysis to be done of what materials can be eliminated, reduced, replaced, and reused as well as recycled. It also allows companies to identify which materials may end up in the trash of other companies or consumers.

In addition to helping conduct waste audits and materials assessments, technical assistance programs can provide businesses with information and other assistance through the multistep process of setting up a source reduction program. The steps for setting up a program include:

- Getting upper management support and distributing a policy statement to all employees.
- Creating a source reduction task force with representatives from different departments (i.e., administration, janitorial, purchasing, and professional staff)
- Gathering basic waste generation and material usage information from each department and reporting current purchases (amounts and costs) to develop baseline data.
- Setting goal (company wide, departmental, or by material)
- Setting an agenda, by putting out suggestion boxes for employees, gathering ideas from task force members, prioritizing strategies based on those that are easiest to implement and those that will reduce the greatest amount of waste and save the most money, and discussing obstacles and ways to overcome them.

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- Implementing programs through task force members
- Expanding and evaluating the program by discussing problems and developing solutions; continuing to test new strategies; and measuring, evaluating, and documenting cost and disposal savings.
- Encouraging participating businesses to publicize their source reduction practices on their own.



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Conference:

**MINISTRY OF ENVIRONMENT**

***ANEW VISION, A NEW OUTLOOK***

**Overview of SIU-3 Engagement at MOE**

**Presented by:**

**Mr. Walter Gebeshuber  
(Sector Implementation Unit #3)**

**September 30, 1997  
Issam Fares Hall, AUB**

## ***SECTOR IMPLEMENTATION UNIT # 3***

The European Union ( EU ) and the Lebanese Government ( GOL ) agreed in 1994 to implement the Technical Assistance to the Lebanese Administration ( TALA ) project with the objectives to support the GOL in its endeavour to establish a high managerial apparatus for the planning and the implementation of the National Emergency Response Plan ( NARP ).

The Solid Waste Sector was covered by the Sector Implementation Unit # 3, which was installed at the Ministry of Environment ( MoE ) on June 22, 1994. This Unit, along with three other Units ( water, electricity, public works ) are financed by the EU on a grant basis.

**The main functions of the SIU # 3 are:**

- Definition, design, planning and monitoring of Solid Waste Sector ( SWS ) program projects
- Establishing and coordinating activities with the CDR and other Authorities
- Supervision and management of consultants and engineers within the SWS program
- Monitoring and supervision of supply - and construction contracts
- Training and institutional capacity building
- Cost control and management
- Project management
- Contract management and administration

**The NARP projects, financed by the World Bank were completed and included:**

- Rehabilitation of the waste treatment facilities in Karantina and Amroussieh
- Waste collection, purchase of collection vehicles and equipment
- Evaluation of opportunities for waste treatment, transfer and recycling

The Council of Ministers stipulated that the responsibility of municipal waste collection, treatment and disposal will be delegated to the Municipalities which operate under the tutelage of the Ministry of Municipalities and Rural Affairs.

Based on this decision, it was decided between the MoE, CDR and the SIU#3 to focus part of the SIU activities to assist the MoE on the levels of Technical and Policy Support, Institutional Strengthening, and Human Resource development, while the other part of intervention will devote its activities to the Solid Waste Sector projects handled by the MMRA and the CDR.

*The present activities of the SIU at the MMRA include*

**The Governments " Emergency Project for Greater Beirut"**

- Delayed due to contractual difficulties at the start of the project

**Development of a national Landfill program**

- Investigations and planning of landfills in Baalbek, Zahle, Akkar, Tripoli Koura, Nabatieh Saida and Byblos

**Rehabilitation / Closure of old dump sites**

- Preparation of rehabilitation / closure documents for the dumps in Baalbek and Zahle

**Technical studies for:**

- Coastal Zone Management
- Hospital waste management
- Compost marketing and recycling

*The present activities of the SIU at the MoE are:*

**Development of a Management Information System for the MoE including:**

- Fund accounting, Contract management, Industrial inspection records, Data tracking, Project documentation,

**Review of the Lebanese Environmental Legislation with the aim of:**

- consolidation of existing laws and regulations
- updating and strengthening existing enforcement capacity
- preparation of environmental quality standards
- preparing procedures and modalities for their implementation and enforcement,

**Preparation of an Urban Air Quality Management Plan for the Greater Beirut Area, comprising:**

- Development of regulatory needs and enforcement standards
- Development of an emission and air pollution simulation model
- Development of an urban air quality monitoring program

**Development of an Environmental Emergency Response Plan consisting of:**

- Hazard identification, evaluation and ranking
- Mapping of hazardous areas
- Assessment of existing emergency response plans
- verification of existing emergency response capacities,

**Development of a Solid Waste Management Information System including:**

- Implementation of databases and program codes
- Interfacing with other programs at the MoE
- Reports for all sections of the Sector

**Preparation of a policy paper on the recycling of wasted oil consisting of:**

- Estimation of waste oil amounts of produced oil and projection of demand
- Economic evaluation of waste oil management options
- Development of regulatory needs
- Proposing required changes to the existing legislations,

**Preparation of a strategy plan to phase out leaded fuel including:**

- Review of the existing legislation of car inspections
- Economic and environmental evaluation of the phasing - out strategy
- Evaluation of the social impact of the strategy
- Impact on private and public modes of transportation

**Evaluation of the Master Plan on quarries consisting of:**

- Evaluation of proposed laws and regulations for the operation of quarries
- upgrading and modifications of technical regulations regarding to environmental laws
- development of licensing procedures to operate quarries
- evaluation of redundant and shut-down quarries for their utilization as solid waste disposal sites

*The above activities are fully financed by the European Union through the Sector Implementation Unit # 3*



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Conference:

**MINISTRY OF ENVIRONMENT**

***ANew VISION, A New OUTLOOK***

**The Revised Role of the Ministry of Environment  
Overview of Legislative Implementation Steps**

Presented by:

**Mr. Chafic Abisaid**

**September 30, 1997  
Issam Fares Hall, AUB**

## The Revised Role of the Ministry of Environment Overview of Legislative Implementation Steps.

**Foreword:** During the last two decades, a surge of awareness, especially in the western world, that major new projects, uncontrolled energy consumption, solid, liquid and atmospheric all kinds of waste, desertification, deforestation, etc., are creating negative impacts on the global environment. They came also to realise that many of these impacts transcend individuals, states, regional countries, rather they extend and interact within Mother Earth. No country may feel safe within its own boundaries.

Governments and International Agencies moved into action. International conventions and protocols on climate change, biodiversity, desertification, ozone depletion, marine environment, rational and renewable use of energies, etc., were prepared and gradually ratified by many countries. The most comprehensive being the "Earth Summit" held in Rio/ Brazil in 1992 that came out with an international agreement and a remarkable degree of consensus on " how to make the world more sustainable" through an integrated action plan for environment and development( Agenda 21) to be implemented by the participating countries, Lebanon being one .

Lebanon, who endured a long and tragic period , not only the systematic destruction of its infrastructure, main installations and equipments, but also the usurpation of its natural resources, its urban planning and constructions, its archeological remains and an archaic pollution of its environment in the atmosphere, on land and in the sea.

This Lebanon needed , more than any other country:

- Environmental awareness both official and popular.
- Environmental institutions and legislations updated and regularly so.
- Environmental assistance in the form of specific funded projects

### Creation of the Ministry of Environment:

The first significant step was the creation of the Ministry of Environment (MoE) by the law no /216/ dated 2/4/93 as the government institution responsible for the development of a national strategy for sustainable development, with a broad mandate over environmental issues ( from the power to formulate general environmental policies , to proposing measures for its implementation, to protecting natural and man-made environment and control and prevention of pollution ).

Four years of hectic dealings with urgent environmental problems proved that the "216 law" gave MoE prerogatives that overlap with most line ministries and lacked provision for unit bodies to carry out related tasks and enforce decisions.

Amendment to the existing law became imperative within a new vision and outlook, securing " Proper Environmental Policy Formulation and Involvement of the Implementing Parties".

In close coordination with the Ministry of Administrative Reform(MoAR), MoE revised its role and presented to the Council of Ministers an amendment to the "216 law" , basically as follows:

1- MoE is not an " Executive Ministry", its role is to be confined, over environmental issues, to: " Research, Studies, formulating policies and conditions, Proposing Standards and Limits, Measuring and Monitoring, Public Awareness and Guidance, etc..."

2- MoE , through a " National Environment Council ( NEC)" chaired by MoE Minister and mainly high Officials from concerned line ministries as members, shall study



coordinate and submit to the Council of Ministers the recommendations of the NEC for approval and mandatory implementation.

The proposed amended law was approved by the CoM and is now due to be discussed by the special parliamentary Committee prior to its ratification by the Parliament.

#### The Environment Strategy Framework(ESF):

The large environmental agenda in Lebanon , as opposed to the limited amount of financial, institutional, technical and human resources available to environmental issues, as well as to avoid frequent policy changes through influential local players, made it imperative to focus on specific and limited actions over the next few years in harmony with the three major environmental objectives in Lebanon, namely:

- a- To rehabilitate environmental damage caused by the war.
- 2- To develop preventive tools to environmentally sound development at a lower cost for society.
- 3- To prevent further degradation of natural and cultural assets.

Along this line and in order to strengthen the "Environmental Management " in Lebanon, a fact finding mission of the World Bank( WB ), reflected their findings in a report entitled " Environmental Strategy Framework Paper(ESFP)- January 1996" which was then approved by the stakeholders concerned but was not implemented by CoM. Presently, MoE has updated the (ESFP) in full coordination with the WB and is about to submit a proposed "ESF Decree" to the CoM for approval and implementation.

#### The National Code for the Environment (NCE):

Lebanon has a large body of environmental laws, some dating back to 1930's. These laws are characterised by obsolescence and need updating, some by lack of clarity and/ or coherence and/or absence of mechanisms for implementation and/or general weakness for enforcement.

Supported by UNDP & UNEP under the Capacity 21 programme- phase 1, the consolidation of the existing laws and regulations was initiated by a draft of an NCE which was submitted to the CoM, who established an ad-hoc committee to review and finalise the draft law. No concrete action was taken.

In line with its expected role, MoE revised and redrafted the proposed law and is within days of submission to CoM for approval.

As precluded in the proposed NCE, two main legislative steps are to follow:

- 1- Prepare and issue decrees establishing mandatory environment impact assessment (EIA) regulations and procedures for major public and private projects and define environment assessment (EA) procedures and responsibilities for small projects, thus consolidating and clarifying the legal instruments for granting permits to classified establishments and evaluate all environmental impact assessment and monitor pollution trends.
- 2- Propose specific decrees for ratification of quality standards ; limits for air, water and land pollutants; codes for building, zoning, storage, handling, disposal and treatment; licensing for wells, land use,...; formulating and fixing pollution charges, permitting charges, tax relief as forms of incentives; establish national performance indicators and detail monitoring and measuring methods to carry out periodic spot checks.

#### Environment Impact Assessment( EIA):

Preliminary EIA procedures have been prepared, also, under phase 1 of the UNDP Capacity 21 programme. They have presently been revised , redrafted and nearly finalised by MoE in collaboration with the Sector Implementation Unit( SIU-3) funded by the European Union (EU). They are to be presented shortly to CoM.

#### Standards,Limits, Codes, Licensing Charges, Indicators and Incentives...:

As for the quality standards , limits, codes, licensing, charges , indicators and incentives,  
 since they cross-cut and involve a large number of interested public and private parties,  
 since they englobe practically all environmental issues,  
 since they deal mainly with technical and specialised aspects rather than administrative ones,  
 since they have to be carefully studied and adapted to local conditions so as to secure immediate or gradual enforcement,  
 and since they have to be carefully assessed as to their social, economic, financial,... impacts, if and when enforced,

as such, short- medium- and long term applicable environmental legislations are to be carefully and gradually worked out.

MoE is preparing as an initial plan of action , a series of " Specialised Workshops" covering the various specialised fields of activities . Each workshop shall involve all the concerned public and private parties in the specific activity, who shall meet, discuss, exchange, allocate and propose a final plan of action to draft and finalise proposed decrees relative to that particular activity.

The first specialised workshop meeting shall deal with the " water issue" and is scheduled on october 15, 1997.

In line with the revised role and the new vision of MoE , the above represent the legislative steps taken , so far, by MoE. Complementary activities to enhance this role are being implemented in other fields in full cooperation and support from Foreign Governments and International Agencies.

Thank You.

Chafic Abisaid  
 Advisor to MoE.

Republic of Lebanon  
 Office of the Minister of State for Administrative Reform  
 Center for Public Sector Projects and Studies  
 (C.P.S.P.S.)