



الجمهورية اللبنانية
مكتب وزير الدولة لشؤون التنمية الإدارية
مركز مشاريع ودراسات القطاع العام

LEB/99/664

PROJECT REFERENCE	
LIFETCY	98/RL/136
<i>Please indicate the reference as mentioned in the contract.</i>	

PROJECT TITLE
Lebanese Environment and Development Observatory (LEDO)
<i>Please indicate the full title of the project as stipulated in the contract.</i>

INTERIM REPORT
SECTION I - TECHNICAL REPORT

No: 1	
Period of activities covered by this report	
from: Dec/01/1999	to: Jan/31/2001
<i>The period of activities covered by this report.</i>	

COMMENCEMENT DATE OF THE PROJECT
1 December 1999
<i>The date should correspond to the one mentioned in the official letter sent by the beneficiary to the European Commission confirming the official project start date and of the related project expenses.</i>

AREAS OF ACTIVITY		
Technical assistance	Nature Protection	Demonstration actions
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Please tick the appropriate box.</i>		

BENEFICIARY			
<i>Please indicate the full name and address of the signatory of the contract, i.e. the organisation (entitled to carry out the project under the supervision of the European Commission) and its legal representative.</i>			
Organisation	Ministry of Environment		
Full address	P.O.Box 70-1091 - Antelias		
Country	Lebanon		
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E-mail	lchamas@moe.gov.lb		
Legal representative	Ms. Lamia Chamas		
VAT liability	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	If yes, VAT number :

PROJECT CO-ORDINATOR	Georges AKL
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<i>The project co-ordinator should be the person who deals with the operational/technical issues of the project, and the principal contact for the European Commission.</i>	

TABLE OF CONTENTS

SECTION I - TECHNICAL REPORT

Chapter	Pages
1 PROJECT SYNOPSIS	3 - 13
2 PROGRESS OF THE PROJECT DURING THE REPORTING PERIOD	14 - 15
3 PROJECT PLANNING UP TO THE COMPLETION OF THE PROJECT	16 - 18
4 ANNEXES	19

SECTION I - TECHNICAL REPORT

1. PROJECT SYNOPSIS

PROJECT REFERENCE <i>Please indicate the reference as mentioned in the contract.</i>	LIFETCY 98/RL/136
PROJECT TITLE <i>Please indicate the full title of the project as stipulated in the contract.</i>	LEBANESE ENVIRONMENT AND DEVELOPMENT OBSERVATORY
Place(s) and country (countries) where the project is being implemented	REPUBLIC OF LEBANON

COMMENCEMENT DATE OF THE PROJECT	December 1, 1999
<i>The date should correspond to the one mentioned in the official letter sent by the beneficiary to the European Commission confirming the official project start date and of the related project expenses.</i>	

DURATION OF THE PROJECT <i>This should be the same as mentioned in the contract and in the initial project proposal.</i>	in months:	25
	Completion date:	January 31, 2002

1.1 PROJECT CO-ORDINATOR

Full Name	GEORGE AKL
Title, function	Project Co-ordinator
Organisation	Ministry of Environment
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<i>The project co-ordinator should be the person who deals with the operational/ technical issues of the project, and the principal contact for the European Commission.</i>	

1.2 PROJECT PARTNERS AS CO-FUNDERS

Organisation	MINISTRY OF ENVIRONMENT		
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Full name(s) of the person(s) directly involved in the project	LAMIA CHAMAS		
<i>Logo(s) can be added. Please add as many frame(s) as there are co-funder(s). Indicate also potential co-funder(s) not initially foreseen</i>			

1.3 PROJECT PARTNERS AS SUB-CONTRACTORS

Organisation or Name of individual	UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)		
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Full name of the person(s) directly involved in the project	ROULA MOUSSA		

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Full name of the person(s) directly involved in the project	CHRISTELLE MAURICE		

Organisation or Name of individual	ECODIT		
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E-mail			
Full name of the person(s) directly involved in the project	JOSEPH KARAM		

(Maximum 1 page)

* Copies of their contracts are attached under Annex I

1.4 PROJECT OBJECTIVE(S):

The overall objective(s) of the project are:

1. Provide a better understanding of the situations and trends concerning the environment in Lebanon and key environment-development linkages, including the economic costs of environmental degradation;
2. Reduce gaps and redundancies in environmental data collection and analyses efforts by various public and private sector entities;
3. Supply government and non-government officials and decision-makers with objective elements of information to gear their action towards sustainable development of Lebanon; and
4. Strengthen the capabilities of the Ministry of Environment to coordinate environmental activities by various public and private sector entities and to formulate realistic environmental policies.

1.5 PLANNED OUTPUTS:

Planned Outputs	Initiated During Reporting Period	Completed During Reporting Period	Remarks
Steering Committee	YES	YES	
Report on Data Gaps	YES	YES	
Networking with partners	YES	YES	
Protocol for Info Exchange	YES	ONGOING	Undergoing final phase of signature
Advocating LEDO	YES	ONGOING	All over the life time of the project
Action plan for data collection (Annex II)*	YES	DURING 2001	This is the calculation of indicators phase
Contracted local parties	YES	ONGOING	
Set of relevant indicators (Annex III)*	YES	YES	
Proper set up to receive Data	YES	YES	Data sheets finalized and electronic data base nearly finished
Trained partners (Annex IV)*	YES	YES	All partners have been trained on Indicators and Techniques
Improved data quality	YES	ONGOING	This will be more obvious after calculating indicators.
Operational Partners	YES	ONGOING	Partners are divided into groups each according to his expertise
Comprehension of Indicators' significance	YES	ONGOING	It will reach its peak when communicating results to D.M.
Updated SOER with economic analysis	YES	ONGOING	Contract awarded and work started on updating SOER
Data Base at Ministry of Environment (Annex V)*	YES	YES	Six Database are accessible by MoE staff. Complete topographic maps on GIS are available for MoE staff.
Quantitative Data	YES	NO	Awaiting completion of calculating Indicators
Accessible Data	YES	ONGOING	
Brochures/Reports/Awareness material	YES (Brochure, workshop reports, identified indicators)	ONGOING	<ul style="list-style-type: none"> • 1 brochure is out • 2 workshop organized • Handbook under process • Website published
Web Pages	YES	YES - ONGOING	www.moe.gov.lb/ledo/index.html
Maps (Annex VI)*	YES	ONGOING	Continuous efforts on increasing the number of GIS maps at MoE
Environmental Atlas	YES	NO	In the design phase
Environmental CD ROMs	NO	NO	
Available studies for funding	YES	YES	3 proposals were submitted to EC

Publicity	YES	ONGOING	funding (1 to UNEP already awarded)
Trained MoE staff to sustain LEDO	YES	NO	Partial training was done to MOE IT specialist. Training to all MoE on new application
Progress Reports	YES	ONGOING	One Six-months report to EC. Two Six-months report to UNDP. One Interim/ six-month report to EC.
Financial Report	YES	YES (FIRST ONE)	The present one.
Final Report	NO	NO	
Generation of new projects to support LEDO activities	YES	YES - ONGOING	MED-ERMIS (Greek Fund) Trade & Environment (UNEP/UNCTAD) Others in the pipeline.

* All activities followed by the ' * ' have supporting documentation under the specified Annexes number.

Notes:

1. The Yes or No under the second column indicates whether activity has been initiated or not.
2. The Yes or No under the third column indicates whether the activity has been completed or in process of completion.

1.6 PROJECT ACTIVITIES:

ACTIVITIES	DESCRIPTION/COMMENTS
1.1. Mobilization of LEDO Team	After the recruitment of the project manager by December 1, 1999 all the preparations were undertaken and the team was fully on board by February 1, 2000 following UNDP recruiting procedures
1.2. Formulate Steering/Advisory Committee	The project formulated a Steering committee representing all institutions in direct relation to environment and development issue. In addition to that it was foreseen to have a think tank committee advising the LEDO team on the scientific part of the work and the studies done in that regard
1.3. Identify Existing Information Base	Since the start the project team reviewed all documents available at the Ministry of Environment in addition to documents existing in other institutions to preliminary identify the status of the existing information base. (Annex VII list of documents reviewed).
1.4. Develop a draft Report on data gaps/redundancies	The report was developed and finalized after the workshop of May 2000.
1.5. Advocate for a national workshop (the first workshop)	This was a very important step to be able to orient the workshop towards the required objective, which was the identifications of the needs and responsibilities of each institution in terms of information.
1.6. Organise Workshop to involve/commit partners in evaluating information requirements	The workshop required lots of preparation since every institution present was asked to deliver a presentation according to a specific structure that we have previously set and forwarded to them.
1.7. Establish Network of Partners	This is actually related to the creation of the Steering committee and Advisory Group that we have put together. With whom continuous follow up is being carried out.
1.8. Finalise Report on data gaps/redundancies	The final version of the status of information was prepared after the workshop and a copy was attached to our six-monthly report.
1.9. Set-up a DBMS to communicate with multi Platforms at MoE	Different data existed at the ministry, concerning Quarries, Consultants, Candidates, Funding agencies, industries and hospitals and full coverage of topographic maps for Lebanon. They were all put together under a unified data base application finalized by the LEDO specialist.

1.10. Draft Multi-Agency MoU	The legal consultant has been contracted and the first draft was out by December end. It was discussed in an open session with all partner institutions and the final version is set ready for signature. The purpose of this MoU is to pave the way for the sustainability of the monitoring process using indicators.
2.1. Identify Priority Env. & Dev. Issues	During the first workshop and after thorough revision of the studies and assessments done a set of general priorities was exposed from which the working groups were able to identify the priorities in each sector and categorize them as short, medium and long term priorities.
2.2. Develop Action plan to fill Data Gaps	Attached under Annex II, is the workplan to report on the identified indicators filling the data gaps highlighted in the workshop.
2.3. Produce tentative list of Indicators according to priority issues	Following the first workshop the LEDO team engaged in a long and tedious process for the identification of the indicators related to those priorities taking into consideration the work done on indicators by the Bleu Plan , the MCSD and the World Bank.
2.4. Develop with identified partners set of Indicators relevant to Lebanon	This activity was actually performed in the second workshop organized in September 2000, where we have had a set of preliminary indicators prepared to guide the working groups in their selection. It was a major step towards engaging everybody in the identification process.
2.5. Conduct consultations to finalize Indicator's list	The final list of indicators will be divided into groups. For each group the related institutions will be again consulted but individually where again a further assessment of the possibility to calculate the identified indicators will be performed.
2.6. Calculating Indicators	For each group of indicators a team of specialists, including the responsible institutions, will work on calculating the indicators. It is the best way to get a clear picture of which indicators can be really developed in Lebanon, not to mention the necessity of this exercise to get everybody engaged.
2.7. Identify Electronic Network Requirements	While conducting the consultations the LEDO IT specialist will perform his survey to assess the accessibility of each of the institutions to computers and internet. This will help in designing the best way for the indicators to be updated and accessed.
2.8. Use remote sensing for data generation	Satellite imagery are being consulted and investigated in the data generation process if no other means are found possible.
3.1. Training of LEDO Team & MoE staff on Observatory Techniques in all aspects	The LEDO team did not have the chance so far to attend any training sessions abroad in spite of our attempts with mainly IFEN from France with the exception of the meetings organized by the Bleu Plan on indicators and observatories. From the IT side we are continuously updating the IT department at MoE with the set being prepared by the LEDO.

3.2. Workshops/Training for partners/stakeholders on Indicator's Techniques	This workshop took place in September 2000 where participants from all sectors were attending. This training workshop introduced the indicator science technique and explained the benefits of using indicators. Moreover it introduced the indicator data sheet and explained the requirements in filling the data sheets. Another purpose behind this workshop was the production of the final list of indicators for Lebanon.
3.3. Support partners in implementing action plan	We have divided the indicators into groups of similar aspects. Consequently the partners will be divided into groups each according to his expertise to cover the calculation of the set of indicators identified for each of the groups. The LEDO team will be the running the organization of this activity according to a set workplan (attached under Annex II).
3.4. Support Tripoli Observatory	Since the launching of the LEDO the Tripoli observatory has been escorting our work progress and is being represented by its president on the LEDO Steering Committee. Moreover, the LEDO team helped in the preparation of their future workplan. On the GIS side, we have developed GIS based map for the area they cover to be a base for their planning. Future assistance is in the pipeline.
3.5. Involve MoE staff in all project activities	All workshops, seminars and consultations conducted and organized by the LEDO are being attended by at least three members of the MoE staff in addition to the Focal Point.
3.6. Involve MoE in GIS/DBMS Operations	The IT department at the MoE is escorting all the progress of work being achieved by the LEDO IT specialist and the use the data base was introduced to all MoE staff.
3.7. Support MoE Staff on follow-up of National & International Initiatives.	The LEDO team has been assisting different departments at MoE in following up on international conventions such as: Trade and Environment, MEDSTAT, RAMSAR, Regional Air and Water monitoring network, Project proposals.
4.1. Identify Resources to update SOER	The LEDO team carried out intensive research and consultations for the identification of the team to work on the updating of the State of the Environment Report with different concerned parties mainly MoE staff Council for Development and Reconstruction. Last but not least LEDO team developed the Tender Document for the awarding of the updating work to better screen among the best short listed companies.
4.2. Update info for production of SOER	The prepared tender document contained exact details on the structure and the data to be updated in the SOER as a guiding tool for the subcontracted team.
4.3. Publish an Updated SOER	This is foreseen to take place in the month of October/November.
4.4. Workshop to Disseminate SOER	We have foreseen the organization of a national workshop for the dissemination of the updated version of the SOER in the month of November, where copies of the report will be disseminated along with an electronic version on CD-ROM to the largest possible target group.

5.1. Devise data conversion mechanism	All data available at the MoE was converted and entered in the newly developed DBMS by our IT specialist and is being actually accessed by all ministry staff.
5.2. Develop GIS base maps (Check Annex VI)	120 topographic maps were digitized by the LEDO project and introduced to the GIS system developed for MoE as base maps for all GIS work. Moreover it is now linked to all the DBMS at MoE. These are the most important maps to any GIS application to be introduced at MoE.
5.3. Prepare geo-coding of data base (Check Annex VI) (Check Annex VII)	Intelligent maps were developed based on existing and collected information about different environmental aspects linked to the indicators. They are all GIS based and contain on the data geographically. It is important to note here that this work developed by the LEDO at the MoE is a pioneer step in the public sector and is being enquired about even among the private sector.
5.4. Develop web pages for LEDO	Check the URL link : www.moe.gov.lb/ledo/index.html (Annex VIII Home Page print out)
5.5. Produce publications/Media production	<ul style="list-style-type: none"> • 1 brochure is out • 2 workshop organized • Handbook under process • Website published
5.6. Develop Environmental Atlas	This activity might be subject to some delay due to the idea of linking it the indicators results. However work has started on the structure and the contents in addition to data collection.
5.7. Produce CD ROMs	Two main CD-ROMs shall be produced that of the Atlas and that of the SOER.
5.8. Produce hand book on developed indicators, their significance, and economic relevance"	All the identified indicators, along with their respective data sheets, are being compiled to produce a handbook on indicators with explanations on every indicators and case studies on how could an indicator be used for planning. This shall be considered as the LEDO partners' reference book for future monitoring activities.
6.1. Ensure signing MoU	The final MoU version is finalized and we are in the process of legalizing its signature by a Ministerial Decree.
6.2. Provide appropriate training for MoE staff to follow up on LEDO activities	This is an ongoing process since the MoE staff is being present at every training or workshop event we are organizing. In addition to that MoE staff will be present in each of the indicators groups each according to his field of expertise.
6.3. Prepare feasibility studies for the establishment of a decentralized Monitoring Network	This study was developed along with the University of Balamand in Lebanon for the development of a decentralized monitoring network. The Greek Ministry of Environment, through the University of Athens secured funds, for this activity. The project is being launched end of February 2001. The LEDO team will be coaching this project all the way.

6.4.Improve positioning of MoE/LEDO web site over the internet.	This is an activity that we will be undertaking after finalizing the calculation of the first list of indicators, which is actually for the Internet search engines on the web..
6.5.Work on establishing an NEMC	This activity is a very political one and our attempt will have to be politically supported in order to succeed.
6.6.Mobilise resources to support LEDO objectives	Three major projects in support of LEDO objectives have been mobilized by efforts from the LEDO team and the MoE staff. These projects are: <ul style="list-style-type: none"> • Regional Information System for the Environment • Developing indicators for the free trade and environment process • Decentralized monitoring network using indicators technique
6.7.Organise closing workshop on findings and achievements of the LEDO	Planned to take place on January 2002 and shall include a full one day exhibition on all the items, publications, maps Data bases and CD-ROMS produced by the LEDO project.
7.1.Develop Performance indicators to monitor & evaluate project activities	This list was already developed and forwarded in out first six-month report to the Commission.
7.2.Prepare project inception Report	DONE
7.3.Prepare Semi Annual Report for UNDP	DONE
7.4.Prepare Semi Annual report for EC	Included in this INTERIM REPORT
7.5.Prepare Interim/Financial Report for EC	The present report.
7.6. Prepare Annual Project Report (APR) for UNDP	DONE
7.7.Prepare final Report for UNDP (APR)	In due course
7.8.Prepare final Report for EC	In due course

1.7 Planned activities:

2.6. Calculating Indicators	Nov-08-00	Mar-15-01 (ongoing)
2.7. Identify Electronic Network Requirements (DELAYED)	Jan-01-01	Mar-31-01
3.1. Training of LEDO Team & MoE staff on Observatory Techniques in all aspects	Mar-01-00	Oct-31-01
3.3. Support partners in implementing action plan	Aug-01-00	Dec-31-01
3.4. Support Tripoli Observatory	Apr-03-00	Dec-31-01
3.5. Involve MoE staff in all project activities	Dec-01-99	Dec-31-01
3.6. Involve MoE Staff in GS/DBMS operations (EXTENDED)		Mar-31-01
3.7. Support MoE Staff on follow-up of National & International Initiatives.	Aug-01-00	Nov-30-01
4.2. Update info for production of SOER	Oct-02-00	Aug-31-01
4.3. Publish an Updated SOER	Sep-03-01	Nov-30-01
4.4. Workshop to Disseminate SOER	Dec-06-01	One Day
5.5. Produce publications/Media production	To follow outputs from: 2.6,4.4,5.6 & 5.8.	
5.7. Produce CD ROMs	To follow outputs from: 2.6,4.4,5.6 & 5.8.	
5.8. Produce hand book on developed indicators, their significance, and economic relevance (DELAYED)	Dec-01-00	Mar-31-01
6.1. Ensure signing of Memorandum of Understanding (DELAYED)	Dec-25-00	Apr-30-01
6.2. Provide appropriate training for MoE staff to follow up on LEDO activities	Feb-01-01	Jul-31-01
6.4. Improve positioning of MoE/LEDO web site over the internet	April 2001 following the results of calculating the indicators	
6.5. Work on establishing an NEMC (DELAYED)	Jan-01-01	May-31-01
6.6. Mobilise resources to support LEDO objectives	Dec-01-00	Dec-31-01
6.7. Organise closing workshop on findings and achievements of the LEDO	Nov-01-01	Jan-15-02
7.6. Prepare final report for UNDP	Dec-15-01	Jan-31-02
7.7. Prepare final report for EC	Jan-31-02	Mar-31-02

2. PROGRESS OF THE PROJECT DURING THE REPORTING PERIOD

2.1 ACTIVITIES:

Ref.	ACTIVITIES	STATUS OF IMPLEMENTATION
1.1	Mobilization of LEDO Team	Done
1.2	Formulate Steering/Advisory Committee	Done. Includes all line Ministries, NGOs, academic and private sector.
1.3	Identify Existing Information Base	Reviewed all existing documents. (Annex VII)
1.4	Develop a draft Report on data gaps/redundancies	Done
1.5	Advocate for a national workshop (the first workshop)	Done. Took place on may 11 & 12 2000.
1.6	Organize Workshop to involve/commit partners in evaluating information requirements	Done. Took Place as above mentioned
1.7	Establish Network of Partners	Done and ongoing
1.8	Finalize Report on data gaps/redundancies	Produced.
1.9	Set-up a DBMS to communicate with multi Platforms at MoE	Finalized at MoE. 7 databases have been converted and an application developed. (Annex V)
1.10	Draft Multi-Agency MoU	Finalized. (Annex IX)
2.1	Identify Priority Env. & Dev. Issues	Already reported in the 6 monthly report.
2.2	Develop Action plan to fill Data Gaps	Developed. (Annex II)
2.3	Produce tentative list of Indicators according to priority issues	Produced a tentative list of 96 Indicators for Lebanon
2.4	Develop with identified partners set of Indicators relevant to Lebanon	88 Indicators were finalized during the September workshop.
2.5	Conduct consultations to finalize Indicator's list	DONE and in could be subject to further changes during calculation process.
2.6	Calculating Indicators	Will kick-off during February for a period of 3 to 4 months.
2.7	Identify Electronic Network Requirements	Will be conducted during calculation process.
2.8	Use remote sensing for data generation	This activity is an ongoing process and is being mainly implemented in the costal water quality.
3.1	Training of LEDO Team & MoE staff on Observatory Techniques in all aspects	Bleu Plan seminars were attended and under NEDSTAT project one was attended
3.2	Workshops/Training for partners/stakeholders on Indicator's Techniques	The training took place in a special session during the September 2000 workshop.
3.3	Support partners in implementing action plan	Will take place in the calculation process.
3.4	Support Tripoli Observatory	Ongoing activity.
3.5	Involve MoE staff in all project activities	Ongoing process.
3.6	Involve MoE in GIS/DBMS Operations	Ongoing process and will intensify during this year.
3.7	Support MoE Staff on follow-up of National & International Initiatives.	Attended workshops/meetings & assuring follow up on the following: <ul style="list-style-type: none"> • RAMSAR Convention • Trade and Environment • Syrian Lebanese co-operation protocol • Regional Environment Info.System • MEDSTAT
4.1	Identify Resources to update SOER	Already awarded contract.
4.2	Update info for production of SOER	Under process until October 2001.
4.3	Publish an Updated SOER	During November 2001.

4.4	Workshop to Disseminate SOER	November/December 2001
5.1	Devise data conversion mechanism	DONE.
5.2	Develop GIS base maps (Check Annex VI)	DONE and it is an ongoing activity.
5.3	Prepare geo-coding of data base (Check Annex VI) (Check Annex VII)	Finalized during 2000.
5.4	Develop web pages for LEDO	DONE. Regular updating.
5.5	Produce publications/Media production	Brochure is out. Web Site is out
5.6	Develop Environmental Atlas	In the Design phase.
5.7	Produce CD ROMs	Will follow the Atlas and the SOER
5.8	Produce hand book on developed indicators, their significance, and economic relevance"	Final stages expected to be published end of March.
6.1	Ensure signing MoU	MoU finalized. Signature to take place in the coming 3- 4 months.
6.2	Provide appropriate training for MoE staff to follow up on LEDO activities	Ongoing.
6.3	Prepare feasibility studies for the establishment of a decentralized Monitoring Network	DONE. Funded by the Greek Ministry of Environment. (Annex X)
6.4	Improve positioning of MoE/LEDO web site over the internet.	During June/July 2001
6.5	Work on establishing an NEMC	Mid 2001.
6.6	Mobilize resources to support LEDO objectives	Partially done and will ensure continuity.
6.7	Organize closing workshop on findings and achievements of the LEDO	January 2002.
7.1	Develop Performance indicators to monitor & evaluate project activities	DONE. (Annex XI)
7.2	Prepare project inception Report	DONE.
7.3	Prepare Semi Annual Report for UNDP	Two are already DONE.
7.4	Prepare Semi Annual report for EC	The Present One.
7.5	Prepare Interim/Financial Report for EC	The present One.
7.6	Prepare Annual Project Report (APR) for UNDP	In Due Course.
7.7	Prepare final Report for UNDP (APR)	In Due Course
7.8	Prepare final Report for EC	In Due Course.

Points to be included in every report:

2.2 Difficulties encountered during the reporting period:

Ref.	DESCRIPTION	SOLUTION(S) IDENTIFIED
2.2.1	Double Reporting Standards (UNDP & EC)	Only dedication of more time
2.2.2	Scattered data in Lebanon	Intensified contacts and allocated more time
2.2.3	Introduce Indicators to partners	<ol style="list-style-type: none"> 1. Intensive concentration on the technique during the September Workshop 2. Participatory calculation process

3. PROJECT PLANNING UP TO THE COMPLETION OF THE PROJECT

Short description of the activities still expected to be carried out up to the completion of the project.

Ref.	ACTIVITIES	DESCRIPTION/COMMENTS
2.6.	Calculating Indicators	For each group of indicators a team of specialists, including the responsible institutions, will work on calculating the indicators. It is the best way to get a clear picture of which indicators can be really developed in Lebanon, not to mention the necessity of this exercise to get everybody engaged.
2.7.	Identify Electronic Network Requirements	This will be performed by our IT specialist and accordingly we will decide on the access mode of the Indicators' database in addition to the Web access.
3.1.	Training of LEDO Team & MoE staff on Observatory Techniques in all aspects	The LEDO team did not have the chance so far to attend any training sessions abroad in spite of our attempts with mainly IFEN from France with the exception of the meetings organized by the Bleu Plan on indicators and observatories. From the IT side we are continuously updating the IT department at MoE with the set being prepared by the LEDO.
3.3.	Support partners in implementing action plan	We have divided the indicators into groups of similar aspects. Consequently the partners will be divided into groups each according to his expertise to cover the calculation of the set of indicators identified for each of the groups. The LEDO team will be the running the organization of this activity according to a set workplan (attached under Annex II).
3.4.	Support Tripoli Observatory	Since the launching of the LEDO the Tripoli observatory has been escorting our work progress and is being represented by its president on the LEDO Steering Committee. Moreover, the LEDO team helped in the preparation of their future workplan. On the GIS side, we have developed GIS based map for the area they cover to be a base for their planning. Future assistance is in the pipeline.

3.5.	Involve MoE staff in all project activities	All workshops, seminars and consultations conducted and organized by the LEDO are being attended by at least three members of the MoE staff in addition to the Focal Point.
3.6.	Involve MoE in GIS/DBMS Operations	Partially completes by introducing the new application. It will carry on for the complete transfer of know how to the IT department in terms of GIS.
3.7.	Support MoE Staff on follow-up of National & International Initiatives.	The LEDO team has been assisting different departments at MoE in following up on international conventions such as: Trade and Environment, MEDSTAT, RAMSAR, Regional Air and Water monitoring network, Project proposals.
4.2.	Update info for production of SOER	The prepared tender document contained exact details on the structure and the data to be updated in the SOER as a guiding tool for the subcontracted team.
4.3.	Publish an Updated SOER	We have foreseen the organization of a national workshop for the dissemination of the updated version of the SOER in the month of November, where copies of the report will be disseminated along with an electronic version on CD-ROM to the largest possible target group.
4.4.	Workshop to Disseminate SOER	We have foreseen the organization of a national workshop for the dissemination of the updated version of the SOER in the month of November, where copies of the report will be disseminated along with an electronic version on CD-ROM to the largest possible target group.
5.5.	Produce publications/Media production	This is an ongoing process that will support all the preparatory work we are doing for this coming year.
5.6.	Develop Environmental Atlas	We have developed a tentative structure for this Atlas in the process of finalizing it.
5.7.	Produce CD ROMs	Two main CD-ROMs shall be produced that of the Atlas and that of the SOER.
5.8.	Produce hand book on developed indicators, their significance, and economic relevance	All the identified indicators, along with their respective data sheets, are being compiled to produce a handbook on indicators with explanations on every indicators and case studies on how could an indicator be used for planning. This shall be considered as the LEDO partners' reference book for future monitoring activities.
6.1.	Ensure signing of Memorandum of Understanding	The final MoU version is finalized and we are in the process of legalizing its signature by a Ministerial Decree.
6.2.	Provide appropriate training for MoE staff to follow up on LEDO activities	This activity has started with the training on the use of the database application and will continue on two fronts, the GIS front, and management front.
6.4.	Improve positioning of MoE/LEDO web site over the internet	This is an activity that we will be undertaking after finalizing the calculation of the first list of indicators, which is actually for the Internet search engines on the web..

6.5.	Work on establishing an NEMC	This activity is a very political one and our attempt will have to be politically supported in order to succeed.
6.6.	Mobilize resources to support LEDO objectives	Three major projects in support of LEDO objectives have been mobilized by efforts from the LEDO team and the MoE staff. These projects are: <ul style="list-style-type: none"> • Regional Information System for the Environment • Developing indicators for the free trade and environment process • Decentralized monitoring network using indicators technique
6.7.	Organize closing workshop on findings and achievements of the LEDO	Planned to take place on January 2002 and shall include a full one day exhibition on all the items, publications, maps Data bases and CD-ROMS produced by the LEDO project.
7.5.	Prepare Interim/Financial Report for EC	This present report is combining both the 2 nd semi annual report of the EC and the interim Report as well.
7.6.	Prepare final Report for UNDP (APR)	Will take place in due course as per the format and the requirements of UNDP
7.7.	Prepare final Report for EC	Will take place in due course as per the format and requirements of the EC.

4. ANNEXES

- Annex I: Copies of the contracts signed with the subcontracted parties mentioned under section "1.3 Project Partners as Subcontractors".
- Annex II: Action Plan for Calculating Indicators.
- Annex III: Final List of Indicators.
- Annex IV: September 2000 Workshop Report including List of Participants.
- Annex V: Screen Print out on the Database Structure.
- Annex VI: Print out of GIS Maps developed by the LEDO.
- Annex VII: List of Documents reviewed by the LEDO team.
- Annex VIII: Print out of the LEDO Home page.
- Annex IX: Copy of the Memorandum of Understanding (in Arabic)
- Annex X: Summary of the Study for the establishment of a Decentralized Monitoring Network funded by Greece "MED-ERMIS"
- Annex XI: List of Performance indicators to measure implemented activities.

NB Please refer to the contract concerning the acknowledgement of the support given by the Commission including the use of the LIFE logo.

الجمهورية اللبنانية
مكتب وزير الدولة لشؤون التنمية الإدارية
مركز مشاورتي ودراسات القطاع العام

Annex I: Sub-Contracts

1. UNDP:
Provision of support services.
2. ECODIT:
To prepare State of Environment Report for Lebanon.
3. NAZIH CHLELA:
To prepare Memorandum of Understanding between Ministry of Environment and partners.
4. NETWAYS:
To develop a WebSite to promote environmental information dissemination.
5. VIVENDI:
Designing and printing of letterheads and business cards in two languages.

**STANDARD LETTER OF AGREEMENT
BETWEEN UNDP AND THE GOVERNMENT OF LEBANON
FOR THE PROVISION OF SUPPORT SERVICES**

Excellency,


- 1 Reference is made to consultations between officials of the Government of Lebanon and UNDP with respect to the provision of support services by the UNDP country office for nationally managed project LEB/99/005 - "Lebanese Environment and Development Observatory". UNDP and the Ministry of Environment hereby agree that the UNDP country office may provide such support services at the request of the Ministry of Environment through its institution designated in the relevant project document, as described below.
- 2 The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
- 3 The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the project:
 - (a) Identification and/or recruitment of project and programme personnel;
 - (b) Subcontracting activities
 - (c) Identification and facilitation of training activities;
 - (d) Procurement of goods and services; and
- 4 The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP Resident Representative and the Ministry of Environment.
- 5 The relevant provisions of the Standard Basic Assistance Agreement with the Government (the "SBAA"), dated 10 February 1986, including the provisions on liability and privileges and immunities shall apply to the provision of such support services. The Ministry of Environment shall retain overall responsibility for the nationally managed programme or project. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the project document.

LEDO Project
LIFETCY98/RL/136

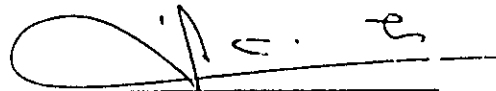
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6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.
7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the project document.
8. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.
9. If you are in agreement with the provisions set forth above, please sign and return to this office. Upon your signature, this letter shall constitute an agreement between the Ministry of Environment and UNDP on the terms and conditions for the provision of support services by the UNDP country office for the nationally managed project LEB/99/005 - "Lebanese Environment and Development Observatory".
10. This agreement is suscribed in full respect of the provisions included in the contract LIFETCY 98/RL/136 between the Lebanese Ministry of Environment and the European Commission and regulating the EU grant of 362 500 Euro.

Yours sincerely,



For the Government
Arthur Nazarian
Minister of Environment
2/11/99



Signed on behalf of UNDP
Yves de San
Resident Representative

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LIFETCY98/RL/136




وثيقة تبليغ مباشرة عمل

اسم الادارة المبلغة : وزارة البيئة
اسم الشخص المبلغ : الدكتور ميشال موسى - وزير البيئة
اسم الشخص المبلغ : الاستاذ جوزيف كرم (شركة ECODIT)
موضوع التبليغ : استدرج العروض المتعلقة بتلزم دراسة إعداد وضع البيئة
في لبنان - ودفتر الشروط العائد له
مكان التبليغ : وزارة البيئة
تاريخ التبليغ : ٢٠٠٠/١٢/٣٠
المطلوب : كتاب تأمين بقيمة ٠ % وطوابع أميرية بقيمة ٣ % بالآلاف
من المراجع المختصة.

توقيع المبلغ

وزير البيئة
د. ميشال موسى

توقيع المبلغ اليه


ECODIT - LIBAN
s.a.r.l.

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W/FETCY98/RL/136





LEB/99/005 - Subcontract

MEMORANDUM OF AGREEMENT No.S4/00

This Memorandum of agreement is made this Monday, 6th of November, 2000 between the Ministry of Environment through its Lebanese Environment and Development Observatory Project LEB/99/005 (hereinafter referred to as LEDO) and Mr. Nazih Chlela, Legal Consultant (hereinafter referred to as the Subcontractor) whose address is the following:

Jounieh Square
Sfeir Building
Second Floor
P.O. Box 440
Tel/Fax 09-935172

WHEREAS LEDO is willing, to prepare a Memorandum of Understanding (hereinafter referred to as MoU) between the Ministry of Environment (hereinafter referred to as MoE) and other institutions adopting specific set of environment and development indicators as an outcome of the "LEDO Indicators Workshop in September 2000",

WHEREAS the subcontractor is willing to prepare the MoU between the MoE and all institutions involved,

NOW, therefore, the parties hereto agree as follows:

I. Scope of Work

The Subcontractor agrees to undertake the preparation of the MoU according to the following Terms of Reference:

- a). The Subcontractor agrees to review the September Workshop report to be familiar with the adopted indicators and the adopting parties
- b). The Subcontractor agrees to review existing Lebanese legislations regarding the establishment of a MoU among Government institutions,

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d). The Subcontractor agrees to draft a set of MoUs to be signed between MoE and the institutions adopting environment and development indicators specified in the LEDO September 2000 Workshop.

e). The Subcontractor agrees to organize a discussion seminar to review and comment with representatives of the adopting institutions the MoU.

f). The Subcontractor agrees to arrange for individual meetings with decision-makers from the adopting institutions to lobby for the signature of MoU.

g). The Subcontractor agrees to draft final MoU to be signed by the involved institutions.

h). The LEDO shall provide the Subcontractor the necessary information and material, produced so far.

II. Obligations:

1) The Subcontractor agrees to meet all dates mutually agreed upon, without any delays provided that LEDO delivers the necessary material to the Subcontractor on time, otherwise the Subcontractor will not be held responsible for any delay that might occur from this act.

2) LEDO team shall be responsible for all co-ordination required with the involved institutions and the Subcontractor shall not be held responsible for any delay arising from this act.

III. Duration:

The contract duration shall be three months.

IV. Payment:

a). LEDO agrees to pay the Subcontractor the sum of U.S. \$3000/= (U.S. Dollars Three Thousand only).

b). The sum shall be paid according to the following schedule:

- US\$ 1000 upon receipt of first progress report
- US\$ 1000 upon receipt of draft MoU
- US\$ 1000 upon satisfactory completion of final MoU to include all comments and changes requested by the involved institutions.

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V. General Provisions:

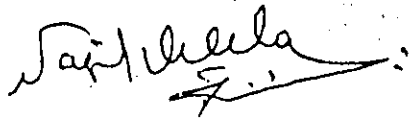
- a) The Subcontractor shall carry out all the services under this agreement with due diligence and efficiency.
- b) The Subcontractor shall remain solely liable for any claims arising from the Subcontractor's negligent acts or omissions in the course of performing this agreement.
- c) The Subcontractor shall remain solely liable for any claims by third parties and under no circumstances shall LEDO be held responsible for such claims by third parties.
- d) All Documents submitted to the Subcontractor by the LEDO team, belonging to any of the LEDO partners, remain the property of the partners and can be claimed back from the Subcontractor at any time
- e) This contract can be terminated by either party before completion, in case anyone of the parties forfeited any of its clauses, by giving a ten day written notice.
- f) Any controversy or claim arising out of, or in accordance with this agreement or any breach thereof, shall unless it is settled by direct negotiation, be settled in accordance with UNICITRAL Arbitration Rules as at present in force. The parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy or claim.

Agreed on Behalf of LEDO



Name: George AKL
Title: LEDO Project Manager

Agreed on Behalf of The Subcontractor



Name: Nazih Chlela
Title: Legal Consultant

Agreed on Behalf of the Ministry of Environment



Name: Berj Hatjian Ph.D.
Title: Director General, MoE

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LEDO Project
LIFETCY98/RL/136



LEB/99/005 - Subcontract

MEMORANDUM OF AGREEMENT No.S3/00

This Memorandum of agreement is made this August 28, 2000 between the Ministry of Environment's Lebanese Environment and Development Observatory project (hereinafter referred to as LEDO) and *Nerways* (hereinafter referred to as Subcontractor) whose address is the following:

Mathaf Center
Hotel Dieu Street
Tel/Fax: 01 - 611110
P.O.Box: 11-4181
Beirut, Lebanon

WHEREAS LEDO is willing, in order to fulfil its objectives in promoting environmental information dissemination among different sectors in Lebanon, to develop a Web site for the project,

WHEREAS the subcontractor is willing to implement the development of this Web Site,

NOW, therefore, the parties hereto agree as follows:

I. Introduction:

The Subcontractors offer dated July 27, 2000 as well as the terms of reference for the project shall consist an integral part of this contract.

II. The Project:

The Subcontractor agrees to undertake the development of the Web site for the Lebanese Environment and Development Observatory (LEDO) based on the Terms of Reference prepared for that purpose and the Subcontractor's offer dated July 27, 2000.

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LIFETCY98/RL/136



III. Specific Conditions:

- a). The Subcontractor will be designing the pages in such a way that each and every page will have a template for the simple updating activities, with the exception of the Home Page.
- b). The Subcontractor agrees to provide a training session, after the publishing of the Web Site, to the concerned person (the person to be nominated by the LEDO) to conduct simple updating activities.
- c). The subcontractor agrees to undertake all necessary actions related to the hosting of the site at the ISP location, namely Messers INCONET where the Ministry of Environment site is hosted.
- e). The Subcontractor shall not undertake the activity of obtaining a Domain Name for the LEDO site.

IV. Delivery:

The Subcontractor agrees to meet all delivery dates that would be mutually agreed upon in the course of the work without any delays, provided that LEDO Team delivers the necessary material to the Subcontractor on time. Otherwise the Subcontractor will not be held responsible for any delay that might occur from this act.

V. Contract Value:

LEDO agrees to Pay the Subcontractor the sum of U.S. \$2585/= (U.S. Dollars two thousand five hundred eighty five only).

VI. Payment mode

The payments will be issued, based on the following schedule, upon receipt of progress reports accompanied by relevant invoice, prepared by the Subcontractor and showing a break down of the work done:

The payments shall be issued as follows

- 20% upon signing the contract.
- 50% upon satisfactory completion of the site.
- 30% after publishing the site and conducting training.

VII. General Provisions:

- a) The Subcontractor shall carry out all the services under this agreement with due diligence and efficiency.
- b) The Subcontractor shall remain solely liable for any claims arising from the Subcontractor's negligent acts or omissions in the course of performing this agreement.

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LIFETCY98/RL/136

c) The Subcontractor shall remain solely liable for any claims by third parties arising from copy right breaching and under no circumstances shall LEDO be held responsible for such claims by third parties.

d) LEDO team shall be responsible for all co-ordination required in terms of making the web site material and content available and the Subcontractor shall not be held responsible for any delay arising from this act.

e) All Documents submitted to the Subcontractor by the LEDO team, remain the property of the LEDO project and can be claimed back from the Subcontractor at any time.

f) This contract can be terminated by either party before completion, in case anyone of the parties forfeited any of its clauses, by giving a ten day written notice.

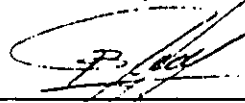
g) Any controversy or claim arising out of, or in accordance with this agreement or any breach thereof, shall unless it is settled by direct negotiation, be settled in accordance with UNICITRAL Arbitration Rules as at present in force. The parties shall be bound by any arbitration award rendered as a result of such arbitrations the final adjudication of any such controversy or claim.

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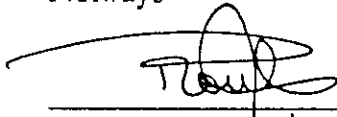
Name: George AKI.
Title: LEDO Project Manager

The Ministry of Environment



Name: Dr. Berj Hatjian
Title: Director General

Netways



Name: Roula Mousa
Title: General Manager

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LIFETCY98/RL/136



LEB/99/005 - Subcontract

MEMORANDUM OF AGREEMENT No.S1/00

This Memorandum of agreement is made this January 5, 2000 between the Ministry of Environment under Lebanese Environment and Development Project project (hereinafter referred to as LEDO) and *Messrs VIVENDI* (hereinafter referred to as Subcontractor) whose address is the following:

Tripoli , Assaf Building
Fax: 06 - 627041
Tel: 03 - 285453

WHEREAS LEDO is willing, to produce printing material namely letter heads and Business cards for the staff,

WHEREAS the subcontractor is willing to execute the design and printing of the above required material,

NOW, therefore, the parties hereto agree as follows:

I. The Scope:

The Subcontractor agrees to undertake the design and printing of letter heads and business cards, based on the Subcontractor's offer dated October 10, 1999, (attached herewith) and in accordance to the material provided by the specification required by the LEDO project.

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LIFETCY98/RL/136

II. Specific Conditions:

- a). The Subcontractor will be designing the letter-heads, with the following particularities:
1. Logo and title of the Ministry of Environment on the top of the page.
 2. Logo and name of the LEDO project on the top of the page.
 3. Logo of the life programme at the bottom of the page.
 4. Logo of the UNDP office at the bottom of the page.
- b). The Subcontractor will be designing business cards for 6 persons (200 cards per person) according to the format agreed upon with LEDO Project Manager.

III. Delivery:

The Subcontractor agrees to meet all delivery dates that would be mutually agreed upon in the course of the work without any delays.

IV. Payment:

- a). LEDO agrees to Pay the Subcontractor the sum of U.S. \$1250/= (U.S. Dollars One thousand two hundred fifty only).
- b). The payments will be issued upon receipt of invoices, signed and stamped by the subcontractor.
- c). The payments shall be issued in the following way:
- 50% upon signing the contract.
 - 50% upon satisfactory delivery of the work.

V. General Provisions:

- a) The Subcontractor shall carry out all the services under this agreement with due diligence and efficiency.
- b) The Subcontractor shall remain solely liable for any claims arising from the Subcontractor's negligent acts or omissions in the course of performing this agreement.
- f) This contract can be terminated by either party before completion, in case anyone of the parties forfeited any of its clauses, by giving a ten day written notice.

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LIFETCY98/RL/136

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g) Any controversy or claim arising out of, or in accordance with this agreement or any breach thereof, shall unless it is settled by direct negotiation, be settled in accordance with UNICITRAL Arbitration Rules as at present in force. The parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy or claim.

Agreed on Behalf of LEDO

Name: George AKL
Title: LEDO Project Manager

Agreed on Behalf of VIVENDI

Name: Christelle Maurice
Title: Managing Director

LEDO Project
LIFETCY98/RL/136

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February 5, 2000

Subject: Amendment No. 1/S1/00

This letter shall serve as Amendment No. One to the Subcontract agreement No. S1/00 dated January 05, 2000 between The Ministry of Environment through LEDO and the Subcontractor VIVENDI, and has been issued to effect the following changes:

II. Specific conditions:

- a). The Subcontractor will be designing the letter-heads, **in English and Arabic**, with the following particularities:
1. Logo and title of the Ministry of Environment on the top of the page.
 2. Logo and name of the LEDO project on the top of the page.
 3. Logo of the life programme at the bottom of the page.
 4. Logo of the UNDP office at the bottom of the page.
- b). The Subcontractor will be designing business cards for 6 persons (200 cards per person), **in English and Arabic**, according to the format agreed upon with LEDO Project Manager.

IV. Payment:

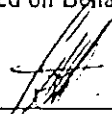
- a). LEDO agrees to Pay the Subcontractor the sum of U.S. \$1880/= (U.S. Dollars One thousand eight hundred eighty only).

All other terms and conditions of the agreement shall remain unchanged and applicable.

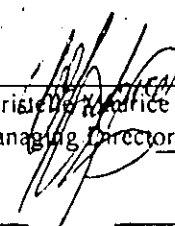
Important Note:

It is to be noted that the Subcontractor already received the amount of US \$625/= (US Dollars Six Hundred twenty five) from the above appearing sum.

Agreed on Behalf of LEDO


George AKL
Project Manager

Agreed on Behalf of VIVENDI


Christine De la Roche
Managing Director

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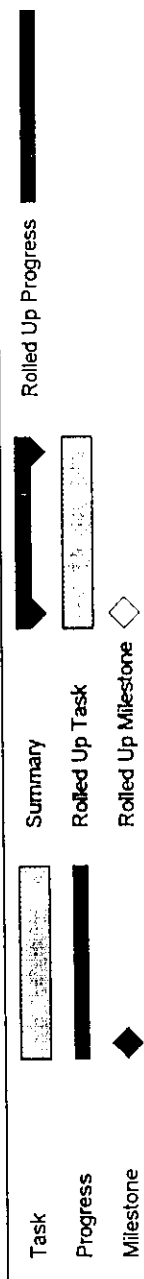
LEDO Project
LIFETCY98/RL/130



Annex II: Action Plan Indicators

**Lebanese Environment and Development Observatory
Work Plan for Working Groups on Indicators**

ID	Task Name	Duration	Start	January 2001	February 2001	March 2001	April 2001	May 2001	June 2001
1	Steering Committee Meeting	1d	02/01						
2	Signing of MoU	42d	15/02						
3	Confirmation of participants to working groups	6d	10/01						
4	Finalise working groups	5d	18/01						
5	Conduct meeting to set workplan for each group	5d	14/02						
6	Assign coordinator for each working group	5d	14/02						
7	Draft compilation of Indicator data sheets	28d	21/02						
8	Conduct consultation on calculated indicators	7d	12/04						
9	Finalise short-term indicators	14d	23/04						
10	Update Indicator's system database	8d	11/05						
11	Present results to steering committee	8d	16/05						
12	Disseminate obtained results	11d	25/05						
13	Set strategy for compilation of uncalculated indicators	16d	08/06						
14	Develop strategy to sustain the updating process	16d	08/06						



Project: Indicators - Working Groups
Date: 13/02

Task

Progress

Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Rolled Up Progress

Annex III: Environment and Development Indicators for Lebanon

Environment and Development Indicators for Lebanon

Ref. nb	Indicator	Unit	Type	Time Frame	Concerned Institution	B.P. Ref.
A- Demography						
1	Population density	Inhabitants/ sq. km	S	Medium	Central Administration of Statistics Ministry of Social Affairs	
2	Urbanization rate	%	S	Long	Central Administration of Statistics Ministry of Social Affairs	20
3	Urban population growth rate	%	P	Long	Central Administration of Statistics Ministry of Social Affairs	18
4	Population density in coastal area	Inhabitants/ sq. km	S	Long	Central Administration of Statistics Ministry of Social Affairs	31
5	Population growth in coastal area	%	P	Long	Central Administration of Statistics Ministry of Social Affairs	
6	Population change in rural areas	Persons/ unit area	P	Long	Central Administration of Statistics Ministry of Social Affairs	22
7	Life Expectancy at Birth	Years	S	Medium	Central Administration of Statistics	11
B- Standard of Living						
8	Infant mortality rate	Number per 1000	S	Medium	Central Administration of Statistics Ministry of Public Health	12
9	Access to safe drinking water	% of total pop.	R	Short	Central Administration of Statistics Ministry of Public Health	13
10	Adult illiteracy rate for females and males	%	S	Short	Central Administration of Statistics Ministry of Education	
11	Economically active females and males	%	S	Short	Ministry of Social Affairs	
12	Unemployment rate for females and males	%	S	Short	Ministry of Social Affairs	

Type: P = Pressure; S = State; R = Response

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LEDO Project
LIFETCY98/RL/136

13	Difference between male and female school enrolment ratios	%	S	Short	Ministry of Social Affairs Ministry of Education	7
14	Distribution of GDP	% per sector	P	Medium	Central Administration of Statistics Ministry of Economy & Trade Bank of Lebanon	43
15	External Debt/ GDP	%	S	Medium	Central Administration of Statistics Ministry of Economy & Trade Bank of Lebanon	45
16	Openness rate of GDP	%	P	Medium	Central Administration of Statistics Ministry of Economy & Trade Bank of Lebanon	128
17	GDP per capita	US\$	S	Medium	Central Administration of Statistics Ministry of Economy & Trade Bank of Lebanon	
18	Income distribution (low, intermediate, high)	%	S	Medium	Ministry of Economy & Trade Ministry of Social Affairs	
19	Human poverty index (HPI)	-	S	Short	Ministry of Social Affairs	4
20	Women per 100 men in the labor force per sector	Number per 100 men per sector	S	Short	Ministry of Social Affairs	
C- Consumption/ Production Patterns						
21	Total water demand per sector	Mm ³ /year or %	P	Medium	Ministry of Power & Water	
22	Annual energy consumption per inhabitant	Ton oil equiv. per capita	P	Short	Ministry of Power & Water	14
23	Generation of municipal solid waste	Kg/inhabitant/yr.	P	Short	Ministry of Environment Ministry of Interior & Municipalities Council for Dvlp. & Reconstruction	100
24	Generation, imports and exports of hazardous waste	Metric tons/ yr.	P	Long	Ministry of Environment Ministry of Interior & Municipalities Council for Dvlp. & Reconstruction	102

Type: P = Pressure; S = State; R = Response

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LEDO Project
LIFETCY98/RL/136

25	Destination of household waste	%	R	Short	Ministry of Environment Ministry of Interior & Municipalities Council for Dvlp. & Reconstruction	108
26	Composition of municipal waste	%	S	Short	Ministry of Environment Ministry of Interior & Municipalities Council for Dvlp. & Reconstruction	105
II- Economic Activities						
Ref. nb	Indicator	Unit	Type	Time Frame	Concerned Institution	B.P. Ref.
A- Agriculture						
27	Use of agriculture pesticides	Tons of active ingredient per 1000 hectares	P	Short	Ministry of Agriculture; Customs Syndicate of Importers of Agricultural Pesticides	50
28	Use of fertilizers per hectare of agriculture land	Kg N and Kg P per hectare	P	Short	Ministry of Agriculture; Customs Syndicate of Importers of Agricultural Pesticides	51
29	Share of irrigated agricultural land	%	P	Medium	Ministry of Power & Water Ministry of Agriculture Green Plan; FAO	52
30	Agricultural water demand per irrigated area	M ³ /year/ha	P	Long	Ministry of Power & Water Ministry of Agriculture Green Plan; FAO	53
B- Industry						
31	Unlicensed small & medium industries	% of total number	P	Short	Municipalities	
32	New industrial establishments	Number/category/year	P	Short	Municipalities	
33	Non-categorised industrial zones	Number or sq. Km	P	Medium	Ministry of Industry Municipalities; Ministry of Environment	

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LIFETCY98/RL/136

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34	Number and area of industries in non-categorized zones	Number and sq. Km	P	Medium	Municipalities	
35	Number of quarries and amount of quarried material produced	Number and tons per year	P	Short	Ministry of Environment Ministry of Interior & Municipalities Mouhafazat	
C- Energy						
36	Share of production of renewable energy resource	%	R	Long	Ministry of Power & Water Electricity of Lebanon	
37	Annual energy consumption or consumption per GDP	Gigajoules or Gigajoules/GDP	S	Short	Ministry of Power & Water Central Administration of Statistics	
D- Services						
38	Number of tourist hotel nights per hundred inhabitants	Number per hundred inhabitants	P	Short	Ministry of Tourism Central Administration of Statistics	76
39	Number of international tourist per 100 inhabitants	Number per hundred inhabitants	P	Short	Ministry of Tourism Central Administration of Statistics	80
40	Currency balance due to tourism activities	US\$	S	Short	Ministry of Tourism Central Administration of Statistics Bank of Lebanon	82
41	Number of visitors to protected areas	Number	S	Medium	Ministry of Environment Protected Areas	
42	Number of tourism establishments on coastline	Number	P	Short	Ministry of Tourism Municipalities	
E- Transport						
43	Number of passenger cars per 1000 inhabitants	Number per 1000 inhabitants	P	Short	Ministry of Interior & Municipalities	15
44	Stocks of motor vehicles per age	Number/age bracket	S	Medium	Ministry of Interior & Municipalities	

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LIFETCY98/RL/136

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45	Stocks of motor vehicles per fuel type	Number/type	S	Medium	Ministry of Interior & Municipalities	
III- Environment						
Ref. nb	Indicator	Unit	Type	Time Frame	Concerned Institution	B.P. Ref.
A- Air						
46	Emissions of greenhouse gases	Gigagrams of CO ₂ equivalent/year	P	Short	Ministry of Environment Meteorological Service	110
47	Emissions of Sulfur Oxides	Tons of SO ₂ equivalent/year	P	Short	Ministry of Environment Meteorological Service	111
48	Emissions of Nitrogen Oxides	Tons of NO ₂ equivalent /year	P	Short	Ministry of Environment Meteorological Service	112
49	Concentration of low level ozone	µg/m ³ or ppm	P	Short	Ministry of Environment Meteorological Service	
50	Consumption of Ozone depleting substances	Tons per year	P	Short	Ministry of Environment Meteorological Service	113
51	Concentration of particulates	µg/m ³ or ppm	P	Short	Ministry of Environment Meteorological Service	
B- Water						
52	Sea water quality	Quantity per volume and quality classes	S	Long	Ministry of Environment Ministry of Power & Water Ministry of Public Health National Council for Scientific Research	35
53	Industrial releases into water	Tons/day	P	Medium	Ministry of Environment Ministry of Power & Water Ministry of Public Health	63
54	Share of distributed water not conforming to quality standards	% of total nb of water distribution units or % of total population	S	Short	Water Authorities Ministry of Environment Ministry of Power & Water Ministry of Public Health	86

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LIFETCY98/RL/136

55	Water global quality index	Mg/lit or % of samples complying with standards	S	Medium/Long	Water Authorities Ministry of Environment Ministry of Power & Water Ministry of Public Health National marine Research Center	87
56	Ground water quality index	Mg/lit or % of samples complying with standards	S	Medium/Long	Water Authorities Ministry of Environment Ministry of Power & Water Ministry of Public Health National marine Research Center	
57	Surface water quality index	Mg/lit or % of samples complying with standards	S	Medium/Long	Water Authorities Ministry of Environment Ministry of Power & Water Ministry of Public Health National marine Research Center	
58	Share of collected & treated wastewater by the public sewerage system	%	R	Long	Water Authorities, Municipalities Ministry of Environment Ministry of Power & Water Ministry of Public Health National marine Research Center	88
59	Amount of wastewater collected by type (industry /domestic)	%	R	Long	Water Authorities, Municipalities Ministry of Environment Ministry of Power & Water Ministry of Public Health	
60	Amount of wastewater treated by type (industry /domestic)	%	R	Long	Water Authorities, Municipalities Ministry of Environment Ministry of Power & Water Ministry of Public Health	
61	Area irrigated with treated/untreated sewage	% of total irrigated area	P	Medium	Ministry of Agriculture, Municipalities Ministry of Environment Ministry of Power & Water Ministry of Public Health	

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LIFETCY98/RL/136

C- Land / Soil						
	Forest area	Hectares/%	S	Short	Ministry of Agriculture National Center for Remote Sensing	25
62	Artificialized coastline/total coastline	%	P	Short	Ministry of Public works & Transport National Center for Remote Sensing Directorate of Geographic Affairs	27
63	"Arable land" per capita	Ha/inhabitant	S	Short	Ministry of Agriculture National Center for Remote Sensing	54
64	Ratio of land exploitation	%	P	Short	Ministry of Agriculture National Center for Remote Sensing	92
65	Land use change	Km ² and %	S	Short	Ministry of Agriculture National Center for Remote Sensing	93
66	"Arable land" change	%	S	Short	Ministry of Agriculture National Center for Remote Sensing	94
67	Wet land area	Km ² and %	P	Short	Ministry of Agriculture National Center for Remote Sensing	95
68	Area affected by desertification	ha or %	P	Medium	Ministry of Environment Ministry of Agriculture	
69	Number & area of illegal discharges (open dumps)	Nb and m ²	P	Medium	Ministry of Interior & Municipalities	
D- Biodiversity						
70	Forest's protection rate	%	R	Short	Ministry of Agriculture Ministry of Environment	26
71	Protected coastal area	Hectares	R	Short	Ministry of Agriculture National Center for Remote Sensing	33
72	Protection of specific ecosystems	Area & nb	R	Long	Ministry of Agriculture National Center for Marine Research	39
73	Threatened species	%	S	Short	Ministry of Agriculture Ministry of Environment Natl. Council for Scientific Research	98

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LIFETCY98/RL/136

75	Burnt forest area per year	% of total forest area	S	Short	Ministry of Agriculture Ministry of Environment Civil Defense	120
IV- Sustainable Development Activities & Policies						
Ref. nb	Indicator	Unit	Type	Time Frame	Concerned Institution	B.P. Ref.
A- Activities / Actors						
76	Number of agendas 21 adopted and implemented by local authorities	Number	R	Short	Ministry of Environment Ministry of Interior & Municipalities	127
77	Wastewater treatment rate before sea release for coastal agglomerations over 100000 inhabitants	%	R	Medium	Council for Development & Reconstruction	41
78	Number of wastewater treatment plants	Number per type	R	Short	Council for Development & Reconstruction	
79	Number of fixed air / water / coastal water monitoring stations	Number	R	Short	Ministry of Environment Council for Development & Reconstruction Nat. Council for Scientific Research	
80	Number of associations involved in environment & sustainable development issues	Number	R	Medium	Ministry of Environment Ministry of Social Affairs	123
81	Rehabilitated quarried land	% of total number	R	Medium	Ministry of Environment	65
B- Policies and Strategies						
82	Public expenditure on environmental protection as a % of GDP	%	R	Short	Ministry of Environment Council for Development & Reconstruction	125

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LIFETCY98/RL/136

83	Cost of management of municipal solid waste	% of GDP	R	Short	Ministry of Environment Ministry of Interior & Municipalities Council for Dvlp. & Reconstruction	
84	Development programs/projects concerning the less favoured rural zones	% of total	R	Medium	Ministry of Environment Ministry of Agriculture Ministry of Social Affairs Ministry of Interior and Municipalities Council for Development & Reconstruction	
85	Total expenditures on protected areas	US\$	R	Short	Ministry of Environment Ministry of Agriculture	99
86	Expenditure on waste management	US\$ and/or % of GDP	R	Short	Ministry of Environment Ministry of Interior & Municipalities Council for Dvlp. & Reconstruction	
87	Projects undergoing EIA	% of total projects	R	Medium	Ministry of Environment	
88	Ratified International Environmental Conventions	Number	R	Short	Ministry of Environment	

Annex IV: Report of 2nd LEDO Workshop.
List of Participants to the Workshop