

**THIRD NATIONAL REPORT
OF
LEBANON
TO THE CONVENTION ON BIOLOGICAL
DIVERSITY**

2005

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CONTENTS

A. REPORTING PARTY	3
Information on the preparation of the report.....	4
List of Acronyms.....	12
List of Projects.....	15
B. PRIORITY SETTING, TARGETS AND OBSTACLES.....	21
Priority Setting.....	27
Challenges and Obstacles to Implementation	28
2010 Target.....	28
Global Strategy for Plant Conservation (GSPC).....	66
Ecosystem Approach.....	89
C. ARTICLES OF THE CONVENTION.....	92
Article 5 – Cooperation.....	92
Article 6 - General measures for conservation and sustainable use.....	95
Biodiversity and Climate Change.....	99
Article 7 - Identification and monitoring	101
Decisions on Taxonomy.....	107
Article 8 - In-situ conservation_[Excluding paragraphs (a) to (e), (h) and (j)].....	109
Programme of Work on Protected Areas (Article 8 (a) to (e))	113
Article 8(h) - Alien species	120
Article 8(j) - Traditional knowledge and related provisions.....	125
GURTS	125
Status and Trends	125
Akwé: Kon Guidelines	125
Capacity Building and Participation of Indigenous and Local Communities.....	125
Support to implementation.....	127
Article 9 - Ex-situ conservation.....	129
Article 10 - Sustainable use of components of biological diversity.....	131
Biodiversity and Tourism	140
Article 11 - Incentive measures	144
Article 12 - Research and training	146
Article 13 - Public education and awareness.....	149
Article 14 - Impact assessment and minimizing adverse impacts	156
Article 15 - Access to genetic resources.....	160
Article 16 - Access to and transfer of technology.....	163
Programme of Work on transfer of technology and technology cooperation.....	165
Article 17 - Exchange of information	170
Article 18 - Technical and scientific cooperation.....	172
Article 19 - Handling of biotechnology and distribution of its benefits.....	175
Article 20 – Financial resources.....	177
D. THEMATIC AREAS.....	184
Inland water ecosystems	186
Marine and coastal biological diversity.....	191
General.....	191
Implementation of Integrated Marine and Coastal Area Management.....	196
Marine and Coastal Living Resources.....	199
Marine and coastal protected areas.....	202
Mariculture.....	203
Alien Species and Genotypes.....	204
Agricultural biological diversity	206
Annex to decision V/5 - Programme of work on agricultural biodiversity.....	208
Forest Biological Diversity.....	214
General.....	214
Expanded programme of work on forest biological diversity	216
Biological diversity of dry and sub-humid lands.....	225
Mountain Biodiversity.....	229
E. OPERATIONS OF THE CONVENTION.....	235
F. COMMENTS ON THE FORMAT.....	237

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Information on the preparation of the report

Box I.

Please provide information on the preparation of this report, including information on stakeholders involved and material used as a basis for the report.

This report was prepared by Ghassan Ramadan-Jaradi (Ph.D.), Mireille Andre AKI (MSc.) in close collaboration and coordination with the CBD focal point at the Ministry of Environment Ms. Lara Samaha and the technical assistance of three students from the Lebanese University, within the context of the Biodiversity Enabling Activity Project Top Up Funding financed by GEF and executed by the Ministry of Environment (MoE) and United Nations Development Program (UNDP).

The methodology used to prepare the Third National Report is tailored in response to the paragraph 6 of the guidelines for the TNR, which recommends that in preparing their national reports, Parties involve a wide range of stakeholders in order to avoid subjective inputs by the consultant team, provide a sense of ownership of the document at the national level and to ensure a participatory and transparent approach to the reporting process. In fact, this recommendation is reasonable since participatory approach proved helpful in the preparation of the previous national-level (and worldwide) reports as well as in other projects. However, our methodology has focused on three stages:

a) **Stage 1: Review of all publications and documents related to CBD. They included among others:**

- Guidelines for the Third Report
- CBD Text (Articles)
- Decisions of the COP Meetings
- Strategic Plan of the CBD
- 2010 Biodiversity Target (endorsed by the World Summit on Sustainable Development)
- Handbook of the Convention on Biological Diversity (articles of the convention + COP decisions)
- Global Strategy for Plant Conservation
- NBSAP- National Biodiversity Strategy and Action plan of Lebanon -1998 (MoE/GEF/UNDP)
- Addendum to the "Lebanese National Biodiversity Strategy and Action Plan", prepared in 2005 through the Top-Up Biodiversity Enabling activity Project (MoE/GEF/UNDP/IBSAR)
- SAP BIO project (UNEP/MAP, RAC-SPA, MOE- 2002)) concerning three action plans:
Action Plan 1: Establish Conservation Strategies for Coastal Habitats
Action Plan 2: Establish a Monitoring strategy for the marine and coastal biodiversity
Action Plan 3: Develop necessary legislation for the conservation of marine and coastal biodiversity
- Biodiversity monitoring and indicators: "Guidelines for integrating monitoring programs and indicators in projects within the context of the National Biodiversity Strategy and action Plan for Lebanon", prepared in 2005 through the Top-Up Biodiversity Enabling activity Project (MoE/GEF/UNDP/IBSAR)
- Priorities for Capacity Building Needs for the Conservation and Sustainable Use of Biodiversity in Lebanon, prepared in 2005 through the Top-Up Biodiversity Enabling activity Project (MoE/GEF/UNDP/IBSAR)
- "Bia'atouna Beytouna" A partnership with schools towards biodiversity conservation, organised in 2005 through the Top-Up Biodiversity Enabling activity Project (MoE/GEF/UNDP/IBSAR)
- Biodiversity First National Report of Lebanon to CBD -1998 (MoE/GEF/UNDP)
- Biodiversity Second National Report of Lebanon to CBD – 2002 (MoE/GEF/UNDP)
- Thematic Report of Lebanon to CBD on Alien species (2001)
- Thematic Report of Lebanon to CBD on Protected Areas (MoE, 2003)
- Thematic Report of Lebanon to CBD on Mountain Ecosystems (MoE, 2003)
- Thematic Report on Technology Transfer and Technology Cooperation (MOE/UNDP/GEF/IBSAR, 2005)
- Thematic report on Access and benefit sharing (MOE/UNDP/GEF/IBSAR, 2005)
- Report on the Programme of Work for the Global Taxonomy Initiative (MOE/UNDP/GEF/IBSAR, 2005)
- SEA project (MOE/UNDP/EC-life third country):
Biodiversity manual: a tool for biodiversity assessment into SEA/EIA processes. 2005
SPNL, International Association for Impact Assessment (IAIA), Capacity Building for Biodiversity and Impact Assessment (CBBIA)
- Biodiversity initiatives and reports undertaken by the Ministry of Environment and (see stage 2

for the investigation of all biodiversity initiatives, programmes and projects at the national level).

b) Stage 2: Stakeholders identification, analysis and involvement.

Since the main principle of the preparation of the CBD National Reports is to adopt a participatory approach, the following main stakeholders were identified:

- Ministry of Environment
- Ministry of Agriculture
- Lebanese Agriculture Research Institution
- National Council for Scientific Research (NCSR) including the Marine National Research Center in Batroun
- Academic Institutions developing projects and activities in biodiversity fields
- Different International projects dealing with biodiversity (mainly protected areas project, MedWetCoast project, Agrobiodiversity project, Biodiversity Enabling Activity, Biosafety and others)
- NGOs executing projects and activities in biodiversity fields
- Other government institutions or others relevant agencies which are executing activities covered by the Third National Report questionnaire (Ministry of Tourism, Ministry of Transportation, Ministry of Energy and Water, etc.)
- National Focal Points of the International conventions and agreements signed or ratified by Lebanon
- Individual experts in biodiversity and related domains.

During this stage (2) all biodiversity initiatives, programmes and projects at the national level were investigated.

A preliminary draft of TNR was prepared section by section, where in each section, gaps and stakeholders which may assist in filling these gaps were identified. To allow for continuity, references made in the 2nd National Report are being repeated where the information still applies. Each part was independently circulated among the members of the team preparing the TNR, CBD National Focal Point, and UNDP. This approach has enabled the UNDP to track the preparation process, the National Focal Point to make review, provide comments and to redress and rectify the process. Interviews with the stakeholders have been carried out by Ms. Mireille AKI to collect and update information about the main achievements in biodiversity since the second national report in 2001 (in terms of legislation, technical studies, implementation of activities, projects under construction, strategies under development or finalized, etc). Each stakeholder was consulted according to the section of the CBD National Report relevant to his field of work. (List of stakeholders is provided in table 1).

The proceedings done for the interviews:

- Compile a list of stakeholders
- Prepare files/photocopies/sections for interviews
- Contact stakeholders - fix appointments
- Integrate inputs in terms of:
 - What has been done in terms of policy and strategies/ projects
 - What is being projected though potential proposals
 - What are the successful achievements
 - What are the constraints
 - What are the recommendations

c- Stage 3: preparation of the first draft and organisation of working session/workshop:

Based on the literature review and stakeholders individual meetings, the questionnaire provided in the CBD format has been filled based on available collected information (official documents, legal acts, strategies, reports and reviews, databases as well as information provided by experts representing various institutions, sharing their knowledge and ideas during the undertaken interviews [see the list of interviewed stakeholders below]). The filled format constituted the first draft.

Based on the information needed and gaps, a one-workshop has been organized for target people on Wednesday 31 August 2005 in the Lecture Hall of the Ministry of Environment. The workshop was organized with the involvement of major players and key persons from environmental NGOs, scientific community as well as national and regional institutions (List of participants is provided in table 2) and it had the following major objectives:

1. To introduce Lebanese stakeholders in the CBD process to the Convention's structure, instruments and functions, e.g. on evolving work programmes, guidance by the Conference of the Parties (COP) and commitments to the Convention by Lebanon.
2. To brief the workshop participants about ongoing implementation activities under the Convention in Lebanon.
3. To review and discuss the first draft report and provide complementing information for its finalization.

The agenda of the workshop has included the followings:

- Registration session
- Opening session
- A presentation by Dr. Ghassan Ramadan-Jaradi about Background of the Convention on Biological Diversity, Third national report guidelines and format. It has highlighted the outlines of the report in relation to the strategic planning 2010 goals/ targets, articles of the CBD, thematic areas and COP decisions.
- A presentation by Ms Mireille Andre Akl about the Approach adopted for the preparation of the third national report. It has summarized the approach adopted for the second national report and highlighted the current approach adopted for the third national report which includes a literature review and a participatory approach done through interviews with a: list of stakeholders developed for the third report.

The other sessions for the participatory inputs included three parts:

- Part I: A plenary session whereby a power point review has been done to cover the part C of the report (articles of the Convention) and to integrate the participants' suggestions and recommendations.
- Part II: Working groups whereby participants have been divided into groups to review the part D of the report (thematic areas).
- Part III: A questionnaire has been disseminated to the participants for the evaluation of the current situation related to the implementation of biodiversity projects by their institutions, with a main focus on the outcomes, obstacles and challenges encountered.

The workshop was attended by 37 participants, including the stakeholders interviewed in stage 2, in addition to key-consultants; key-informants and experts from public and private sectors or individuals such as young professionals and interested researchers or students from various universities.

d) Stage 4: Analysis of the workshop results and preparation of the first draft

E-mail consultation

Based on the inputs from the national workshop an updated report was circulated to all members of the team, the CBD National Focal Point and UNDP, to take account of comments made and analysis elaborated. However, it was necessary to continue the interviews, after the workshop, that were judged important to fine tune the draft. Additional comments were provided by some stakeholders via electronic mail exchange.

Finally, the pre-final draft was submitted by sections to the CBD National Focal Point at the MoE and then released back to the team either with minor suggestions or with authorization for its translation into Arabic. The translation was done by Ms. Mireille Andre Akl.

The final draft was submitted in October 2005 in its final version in both Arabic and English to the MoE and UNDP.

Acknowledgement

The team would like to extend their acknowledgment to the CBD National Focal Point at the Ministry of Environment Ms. Lara Samaha for her valuable contribution to this report.

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LIST OF ACRONYMS

ABHASS	Database on research projects sponsored by NCSR in medicine, agriculture, environment, basic sciences, engineering and technology, economy, and related fields
ABS	Access and Benefit Sharing
ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area
ACSAD	Arab Center for the Studies of Arid Zones and Dry Lands
AEF	Arab Environment Facility
AEWA	African Eurasian Migratory Waterbirds Agreement
AFDC	Association for Forest Development and Conservation (NGO)
AGRIS	Universal Network System
ArabMab Network	Arab Man and Biosphere Network under the umbrella of UNESCO
ARDA	Arsal Rural Development Association
AREC	Agricultural Research and Education Center
ASHA	American Schools and Hospitals Abroad
ATEN	Atelier Technique des espaces naturels
AUB	American University of Beirut
AUF	<u>Agence universitaire de la Francophonie</u>
BCH	Biodiversity Clearing House / Biosafety Clearing House
CAMP	Coastal Areas Management Programme
CAMRE	Council of Arab Ministers Responsible for Environment
CARIS	International information system for the agricultural sciences and technologyL FAO
CBD	Convention on Biological Diversity
CD	Compact Disc
CDR	Council of Development and Reconstruction
CEA	Commiseriat a l'Energie Atomique
CEDRE	Coopération pour l'Évaluation et le Développement de la Recherche
CEO	Collegiate Entrepreneurs Organization
CFC	Chlorofluorocarbon
CHM	Clearing House Mechanism
CIESM	Mediterranean Science Commission
CIHEAM	Centre International de Hautes Etudes Agronomiques Méditerranéennes
CINDA	Computer Index of Neutron Data/ Database
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMS	Convention on Migratory Species
CNA	Competent National Authority
CO2	Carbon Dioxide
CoDeL	Combating Desertification in Lebanon
CODIS	Combating Desertification Information System
COP	Conference of Parties
CORDIS	Community Research and Development Information Service
CSA	Community Supported Agriculture
DAI	Development Alternatives Inc.
DAR-IAURIF	Dar Al Handasah-Institut d'Aménagement et d'Urbanism de la Region de l'Ile-de-France
DDC	Drylands Development Centre
DPA	Desertification Prone Areas
EC	European Commission
EC-LIFE	European Commission Life
EIA	Environmental Impact Assessment
EIC	Environment Information Center
ENSDF	Evaluated Nuclear Structure Data File
EPEAU	Enhancement of Permanent Environment Awareness
ESCO	ESCO Global Website
EURONATURE	Scientific Database
FAFS	Faculty of Agricultural and Food Sciences
FAO	Food and Agriculture Organization
FON	Friends of Nature (NGO)
FFEM	Fonds Français pour l'Environnement Mondial
FRA	Forest Resource Assessment
GAC	Government Appointed Committee
GDP	Gross Domestic Production
GEF	Global Environment Facility
GFCM	General Fishing Commission for the Mediterranean

GIS	Geographical Information System
GMO	Genetically Modified Organisms
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HACCP	Hazard Analysis and Critical Control Point
HB	Healthy Basket
HCH	Higher Council for Hunting
IAIA	International Association for Impact Assessment
IAURIF	Institut d'Aménagement et d'Urbanisme de la Région de l'Ile-de-France
IBA	Important Bird Areas
IBSAR	Initiative for Biodiversity Studies in Arid Regions
ICAM	Integrated Coastal Area Management
ICARDA	International Center for Agricultural Research in the Dry Areas
ICM	International Creative Management
ICGB	International Centre for Genetic Engineering and Biotechnology
ICZM	Integrated Coastal Zone Management
IDRC	International Development Research Center
INOCLE	Inter-Islamic Science and Technology Network on Oceanography
INIS	International Nuclear Information System/ Internet Directory
INIST	Institut de l'Information Scientifique et Technique
ISO	International Organization for Standardization
IPGRI	International Plant Genetic Resources Institute
IUCN	World conservation union
IWRM	Integrated Water Resources Management
JICA	Japanese Cooperation International Agency
LARI	Lebanese Agricultural Research Institute
LCECP	Lebanese Center for Energy Conservation Project
LEDO	Lebanese Environment and Development Observatory
LMO	Living modified Organisms
LNCSR	Lebanese National Center for Scientific Research
LWQM	Litani water quality management
LU	Lebanese University
MAB	Man and Biosphere
MAP	Mediterranean Action Plan
MECINET	Mediterranean Citrus Network
MEDA II	Programme/ Financial instrument of the Euro-Mediterranean Partnership
MEDASSET	The Mediterranean Association to Save the Sea Turtles
MEDFOREX	Mediterranean Forest Externalities
MEDWETCOAST	Conservation of Wetlands and Coastal Zones in the Mediterranean
MLF	Multilateral Fund of Montréal Protocol
MNCSR	Marine National Council for Scientific Research
MOA	Ministry of Agriculture
MOE	Ministry of Environment
MOI	Ministry of Interior
MOU	Memorandum of Understanding
MSB	Millennium Seed Bank
MREA	Midwest Renewable Energy Association
MSC-IPP	Management Support Consultant – Investment Planning Program
MWC	MedWetCoast Project
NAP	National Action Plan
NBSAP	National Biodiversity Strategic and Action Plan
NCSA	National Capacity Self Assessment for Global Environmental Management
NCSR	National Center for Scientific Research
NEAP	✶ National Environment Action Plan
NGO	Non-Governmental Organizations
NRP	National Reforestation Plan
O3	Ozone
OH	Ohio
PA	Protected Areas
PAP	Protected Areas Project
PDF-A	Project Development Fund-A
PDF-B	Project Development Fund-B
PGR	Plant Genetic Resources
PINR	Palm Island Nature Reserve
RAC-SPA	Regional Activity Center for Specially Protected Areas
RAMOGE	Accord de Prévention et lutte contre la pollution marine
RAMSAR	The Convention on Wetlands

RICAMARE	Research in Global Change in the Mediterranean
RFU	Regional Facilitation Unit
ROWA	Regional Office for West Asia/ United Nations Environment Programme
RSCN	Royal Society of the Conservation of Nature in Jordan
RSGF	Ramsar Small Grant Fund
SAP-BIO	Strategic Action Plan for the Conservation of Biological Diversity in the Mediterranean Region
SDATL	Schema Directeur d'Amenagement du Territoire Libanais
SEA	Strategic Environmental Assessment
SELDAS	Strengthening the environmental Legislation, Development and Application System/ Project
SISPAM	Stable Institutional Structure for Protected Areas Management/ Project
SO2	Sulfure Dioxide
SOER	State of the Environment Report
SPA	Specially Protected Areas
SPASI	Strengthening the Permitting and Auditing System for Industries
SPNL	Society for the Protection of Nature
SPA	Specially Protected Area
SRAP	Subregional Action Plan
SRI	Stanford Research Institute
STIP	Science and Technology Information Policy
SWEMP	Seventh International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production
TAG-AMIDEAST	TAG-America-Mideast Educational and Training Services
TCNR	Tyre Coastal Nature Reserve
TT&C	Technology Transfer and Cooperation
UK	United Kingdom
UNASYLVA	The International Journal of Forestry and Forest Industries
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFFCCC	UN Framework Convention on Climate Change
USA	United States of America
USAID	United States Agency for International Development
USAID-IRDP	USAID Integrated Rural Development Programme
USD	United States Dollar
USDA	US Department of Agriculture
USEK	Universite Saint Esprit Kaslik
UVC	Underwater Visual Census
WANANET	West Asia and North Africa Network
WIPO	World Intellectual Property Organization
WRI	World Resources Institute
YMCA	Young Men's Christian Association of Lebanon
YMCA-IRDP	Young Men's Christian Association of Lebanon - Integrated Rural Development Programme

INTERNATIONAL PROJECTS EXECUTED BY LEBANON

1 **Biodiversity Enabling Activity Project (Phase 1)**

This project (October 1997-November 1998) was executed in 1998 by the MoE with the support of UNDP/GEF with a budget of 145.500 US\$. The main outcome of this project is the National Biodiversity Strategy and Action Plan (NBSAP) and the first national report that was prepared in order to fulfill the requirements of article 6 and 26 of the CBD.

2 **Biodiversity Planning Support**

This project (November 2000-June 2001) was executed in 2001 by the MoE with the support of UNDP/GEF. The aim of the project is to strengthen the capacity of parties to the Convention on Biological Diversity to prepare and implement National Biodiversity Strategy and Action Plan. The objectives are: exchange of information, general materials and guidelines, appropriate expertise and experience related to biodiversity planning among the arabic countries.

3 **Coastal Area Management Programme (CAMP)**



Lebanon has implemented the "Coastal Areas Management Programme" **CAMP** project from 2002 till 2004. The project which was funded (500.000 US\$) by UNEP/MAP and executed by the Ministry of Environment aimed at contributing to sustainable development and integrated coastal management in Lebanon by strengthening environmental management institutions and protecting the coastal resources. More specifically, the CAMP project addressed the **conservation of natural coastal resources** in the area located between Damour and Naqoura in the South of Lebanon by developing and applying concepts of sustainable development as well as methods and tools of Integrated Coastal and Marine Management (ICAMM) to the economic and social development activities of the area.

4 **GEF Climate Change Enabling Activity Project (Phase I & II)**



Lebanon has ratified the United Nations Framework Convention on Climate Change (UNFCCC) in December 1994 through Law No. 359 dated 1/8/94. Under phase I of the Climate Change Project, and pursuant to Article 4.1 of the Convention, Lebanon has prepared and submitted to the secretariat of the convention Lebanon's First National Communication (LFNC) report in 1999, through funding from the Global Environment Facility (GEF), management of the United Nations Development Program (UNDP) and execution by the Ministry Of Environment (MOE). United Nations Development Program and the Ministry of Environment has mobilized a top –up funding from the Global Environment Facility, to carry out Phase II of the climate change enabling activity project. The project, started in November 2001 and with duration of one year, has set several objectives mainly related to capacity building, training, raising awareness, and fund mobilization

5 **Implementation of Hazardous Waste Program**

This project was funded (180.000 US\$) by METAP (Mediterranean Environmental Technical Assistance Program), WB (World Bank) and MOE. It was executed by MOE in March 2001 for a duration of one year. The project aimed at Preparing a complete study about management of Hazardous Wastes in Lebanon with the following objectives:

1. Reviewing all the previous studies & legislations concerning Hazardous Wastes in Lebanon
2. Preparing a statistical Study about the amount & types of Hazardous wastes in Lebanon
3. Formulating a work plan for the treatment of hazardous Wastes in Lebanon
4. Proposing a Decree to determine the legal procedures in dealing with the management of hazardous wastes

6 **Lebanese Environment & Development Observatory (LEDO)**



The LEDO's (1999-2002, UNDP/EU/MOE) main outputs are the collection of available environmental and developmental data, the identification of priority environmental and developmental issues, and the establishment of a permanent system of indicators for monitoring environment and development trends. The project has prepared a land use/land cover map of the Lebanon, the final draft that was published at the end of March 2002.

With respect to coastal areas three indicators have been developed and these are in the process of being calculated. The LEDO is currently supporting the CAMP project in Damour, Sarafand, and Nakoura in terms of the generation of GIS mapping of these regions. The main objectives of this project are:

1. Finding an Observatory Network for Environment & Development using indicators.
2. Calculating different Environment & developing indicators. Enhancing human capacity building for the ministry of Environment & its partners

7 **Enhancement of the Permanent Environmental Awareness Unit**

A project that was executed by MOE in 2002-2004 with the support of EC-LIFE (453.500 Euros) to enhance the permanent environmental awareness unit at the Ministry of Environment. The overall objective of this project is to assist the Ministry of Environment in establishing a permanent, pro-active Lebanon/ Third National Report to the Convention on Biological Diversity

awareness unit capable of identifying, evaluating, promoting, and assisting in various environmental concerns.

The project would involve creating coalition of task groups within the ministry's Awareness Unit. Each section will take on a specific role to ensure that all aspects of environmental awareness are covered. This includes:

- Conducting a larger number of activities involving environmental clubs, associations, municipalities, and schools
 - Training, monitoring, and rating NGO activities
 - Preparing environmental awareness project proposals for funding
 - Working with the local media to address environmental issues
 - Providing technical assistance to appropriate parties
 - Develop an updated website to be used as a forum for change between the Ministry and the Public
 - Creating and distributing educational manuals, videos, posters, and other efficient awareness planning
 - Accurate and extensive media coverage of pressing environmental issues
- Increased coordination between NGOs, municipalities, educational institutions, and the Ministry
- Greater public participation and feedback through the website
 - Strengthening of environmental activities through appropriate training.
 - Improvement of NGO effectiveness

8 Protected Areas Project (PAP)

With GEF funds (2.500.000 US\$), the **Protected Areas Project** that is entitled "Strengthening of National Capacity and Grassroots In-Situ Conservation for Sustainable Biodiversity Protection" is implemented since 1996 till 2005 by the Ministry of Environment with the collaboration of UNDP and the technical assistance of the World Conservation Union (IUCN). Three protected areas are managed through this project, a marine nature reserve (Palm islands) and two terrestrial mountainous nature reserves (Al-Shouf Cedars Nature Reserve and Horsh Ehdn Nature Reserve). The overall development objective of the project is to conserve endemic and endangered wildlife and their habitats, incorporate wildlife conservation as an integral part of sustainable human development, strengthen the institutional capacity of government agencies and non governmental institutions, and promote national reconciliation.

9 Sustainable Development Networking Programme - SDNP

With UNDP (Capacity 21) funds (256.000 US\$), the **SDNP** was executed by MOE since April 1996 for one year to address three objectives:

1. Facilitating and disseminating sustainable development related information.
2. Capacity building.
3. Enhancing communication between different stakeholders.

10 Strengthening the Permitting & Auditing System in Industries (SPASI)

Aiming at strengthening the Permitting, monitoring & Auditing System in Industries through the development of necessary legislation & introduction of adequate tools, the SPASI project (EU/MOE) that is funded with 443436 Euro was implemented by MOE (2000-2002) with the following objectives:

1. Setting/ updating decrees for specialized establishments.
2. Setting/ updating standards for environmental qualities.
3. Designing the national environmental auditing manual.
4. Developing a compliance action plan.
5. Spreading awareness concerning environmental compliance
6. Building human capacities of concerned parties to conduct compliance action plan, environmental audits & monitoring.

Main outputs of this project include the development of decrees and regulations aimed at strengthening the permitting and auditing system for industry as well as the formulation of appropriate standards.

The project has established National Standards for environmental quality for stack emissions and wastewater (discharge to the sea, surface water, sewer network). These standards have been issued by MOE (#8/1, 2001) and will be introduced on a trial basis before being submitted to become a decree.

11 Unit of Planning & Programming (UPP)

Funded (335.000 US\$ for three phases) by Mediterranean Environment Technical Assistance Program (METAP) (EC-Life through METAP for phases one and two, Swiss Trust Fund through METAP for phase 3), managed by the World Bank and executed by MOE between 1997-2002, the UPP aims are:

- Establish an Environmental Impact Assessment System in Lebanon;
- Assist in the review and amendment of the legislation related to the duties and organization of the Ministry of Environment as well as recruiting new staff;
- Plan and program new projects at the Ministry;
- Launch the Hazardous Waste Program at the Ministry.

The objectives of this project are:

- Draft the EIA Decree;
- Establish an EIA unit at the Ministry and develop EIA review procedures as well as EIA guidelines for

selected sectors;

- Strengthen the capacities of the Ministry staff and other stakeholders in the EIA field;
- Assist in the drafting of the updated MoE organizational law and decree, and recruitment of new staff;
- Assist in the pre-launching, launching and implementation of selected projects at the Ministry;
- Launch the Hazardous Waste Program at the Ministry.

12 Lebanese Cleaner Production Center

A project funded (455,780 €) by EC-Life, Ministry of Environment, UNIDO and executed by the MOE with the aim to build up the capacity of the LCPC for it to become the recognised centre of excellence in Lebanon for CP, to offer CP services to Lebanese SMEs, and to facilitate the transfer to cleaner processes, thus contributing to the sustainable and continuous application of CP by industry in Lebanon. The objectives of this project are:

1. To increase competitiveness among industries
2. To reduce the negative environmental impacts of the industrial production processes
3. To open access to new markets:
4. To stimulate public-private partnerships
5. To promote CP investments, technology development and transfer

13 Conservation of Wetlands and Coastal Zones in the Mediterranean (March 2002-March 2006, MoE/FFEM/UNDP)

Lebanon is part of the MedWet Coast project which is a Mediterranean initiative under the Ramsar Convention. It is a regional project that includes along with Lebanon, Albania, Tunisia, Morocco, and the Palestinian Authority. The regional component is managed and coordinated by the Regional Facilitation Unit (RFU) based in the Tour du Valat in France.

The MedWet Coast Lebanon project's overall development objective is to conserve globally endangered species and their habitats recognizing nature conservation as an integral part of sustainable human development while improving the capacity of governmental and non-governmental agencies to address Biodiversity conservation issues in two main sites: The Tyre Coast Nature Reserve and the Wetland of Aamiq. The project in Lebanon is funded (392,489 \$)

by the FFEM Fonds Francais pour l'Environment Mondial. The national executing agency for the project is the Ministry of Environment. The project is managed by UNDP.

14 Methyl Bromide Alternatives Project (LEB/FUM/26/DEM/24)

The Methyl Bromide Alternatives Demonstration Project (LEB/FUM/26/DEM/24), implemented by Lebanon's Ministry of Environment under the guidance of UNDP, was initiated in May 1999. The aim of the project was to demonstrate the efficacy of various chemical and non-chemical alternatives to methyl bromide (MeBr) use, given Lebanon's specific climactic and geographic considerations, launch on-the-ground training in the proper use of alternatives, and design a national strategy for the replacement of MeBr use in Lebanon. The demonstration project extended its activities over 4 consecutive growing seasons and was able to reach every major agricultural production area in the country. Demonstration sites were located in Mount Lebanon (Jbeil, Shweifat, Rmeily and Damour); North Lebanon (Tripoli and Akkar); South Lebanon (Aakbiyye and Sarafand); and, the Bekaa (Btendii, Zahle, Bar Elias and Kherbet Anafar).

A national strategy to replace MeBr use in Lebanon was subsequently developed based on the results of the demonstration project, and approved at the 34th Meeting of the Executive Committee of the Multilateral Fund in July 2001.

15 Management Support Consultant – Investment Planning Program Environment (MSC-IPP Environment)

As part of IPP, a technical assistance program to the Ministry of the Environment, funded (1600.000 €) by the EU, is at the bidding stage. This consultancy unit will assist the MoE in the planning and preparation of projects and their follow-up in several areas:

- Environmental policy
- Regulatory and public licensing policy
- Institutional strengthening and human resource development policy.

The project started by the end of 2002 and run for three years with the aim of Enhancing Environmental Investment and with the objectives:

- Support Lebanese economic development through mobilizing resources for environmental management
- Create the legal, administrative and physical conditions for effective MoE intervention.

16 Ozone Office

A project funded by Multi Lateral Fund (MLF) for the Montreal Protocol in 1998 with 155,090 \$ for the phase I. Two more phases followed (phase I [2001-2002] and phase II [2003-2005] and were (all Lebanon/ Third National Report to the Convention on Biological Diversity

phases) executed by MOE, aiming at Institutional Strengthening for the Implementation of Montreal Protocol in Lebanon. The objectives of the project are:

- Dissemination of Information on Ozone issues
- Development of policies and legislation
- Data bank Information on ODS
- Assistance to industrial sector to phase out ODS consumption
- Training programmes and Workshops
- Awareness programmes

17 Strategic Environmental Assessment & Land Use Planning in Lebanon (SEA)

A project funded (429,968 €) by EC-LIFE THIRD COUNTRIES and executed by the MOE since 2003 for three years, with an aim to integrate environmental considerations into policies, plans and programs at the national level in order to alleviate major problems facing the national sustainable development agenda. The objectives of this project are:

- Develop a legal, institutional and procedural framework for the application of SEA at a national level
- Build the capacity of concerned national institutions to elaborate on SEA as per their different functions & interventions
- Develop a national strategy for incorporating environmental considerations in urban planning & land use management
- Provide institutional strengthening to the Ministry of Environment (MOE) & Directorate General of Urban Planning (DGUP) for the development of environmental directives to be applied in urban planning & land use management
- Apply the developed environmental directives to a pilot project
- Develop the regulatory basis for the application of the directives

18 Development of National Implementation Plans for Management of Persistent Organic Pollutants (POPs)

Funding mechanism: GEF, Lenders: Switzerland, Germany and Sweden. With a budget [353,000 USD (+ 80,000 USD Lebanon)] this project started in November 2003 and will continue until December 2005. The aim is to strengthen national capacity to manage persistent organic pollutants (POPs) and to assist the government of Lebanon in meeting its obligations under the Stockholm Convention. The objectives are: (1) Strengthening the capacity to implement the POPs Convention through the development of a National Implementation Plan for the management of POPs and (2) the elaboration of detailed specific action plans that will identify effective national responses, processes and measures that would reduce releases of POPs.

19 Integrated Management of Cedar Forests In Lebanon in Cooperation with other Mediterranean Countries (Tannourine Project)

A three years project which has started in July 2004 and funded (\$1,212,200) by the Global Environment Facility, implemented by UNEP, executed by the MOE and managed by the American University of Beirut with the aim of developing an action plan for integrated sustainable management of the Tannourine cedar forest, and addressing the serious threat arising in Tannourine –Haddath El-Jebbeh Forest which is affecting 70% of one of the 12 surviving stands of Cedar forests in Lebanon, which is also the largest.. Protect the forest from invasive insect species that are causing serious damage to trees. The objectives of the project are:

1. Develop a sustainable management plan that addresses possible threats to the ecosystem of cedar forests and means of removal of these threats. The management plan will include the following secondary objectives:
 - i) Understand the causes of *Cephalcia* outbreak in Tannourine and assess the possible threats of similar outbreaks in cedar forests in the Mediterranean region.
 - ii) Develop a pest management plan applied to the Tannourine forest and adapt this plan to other cedar forests in the region through dissemination of knowledge and best practice.
2. Increased institutional and community knowledge exchange, networking, education and capacity building for the management of cedar forests.

20 Stable Institutional Structure for Protected Areas Management (SISPAM)

Protected areas in Lebanon are continuously increasing, from three in 1996 to ten in 2002, with continuous requests submitted to the Ministry of Environment (MoE) for the declaration of new sites. The revised MoE organigramme comprises a Protected Areas Unit within the service of Nature Conservation. Stakeholders involved in protected areas management include the Ministry of Finance, the Ministry of Water Resources, the Ministry of Municipalities and Rural Affairs, municipalities, non-governmental organizations, scientific institutions and the local communities. This large set of stakeholders and increase in protected sites is lengthening the procedures and slowing reaction time. Financial government contributions to the protected areas need to be redefined annually and the allocation procedure entails lengthy bureaucratic procedures.

This SISPAM project aims at identifying and institutionalizing proper and approved structure for the management of protected areas at both the macro and micro levels. The **legal, structural, financial and human aspects** will be tackled to end – up with a comprehensive and **integrated management model**.

The SISPAM project objectives are:

- Adopt the appropriate institutional structure for Protected Areas Management in Lebanon.
- Suggest and implement a detailed action plan for PA management
- Appraising the available resources and capacity requirements
- Agreeing on a sustainable funding structure

The SISPAM project which is started in February 2004 is implemented for a duration of 31 months by MOE and UNDP and funded (455500 €) by EC-Life Third Countries.

21 Development of the National Biosafety Frameworks (NBF)

The UNEP-GEF (240.000 US\$) Development of National Biosafety Framework for Lebanon project, was launched in February 2004 for an initial duration of 18 months. The project is managed by UNDP office – Lebanon, executed by MoE in collaboration with the Initiative for Biodiversity Studies in Arid Regions (IBSAR) at the American University of Beirut (AUB) 2005]. The main aim of the project is the development of a National Biosafety Framework for Lebanon.

The overall objective of this UNEP/GEF Global Project is to prepare countries for the entry into force of the Protocol, by, among others, assisting in the following activities:

- o Carrying out an assessment of current technological capacity to manage Biosafety issues, and the implications of this on the implementation of a National Biosafety;
- o Strengthening national capacity to develop national regulatory biosafety frameworks (NBFs);
- o Strengthening national capacity for competent decision making on notifications and requests related to Living Modified Organisms (LMOs), including the establishment of administrative systems to assist with:
 - Screening notifications and requests for completeness,
 - Risk assessment, including, where appropriate, the consideration of risk management, and risk evaluation (as socio-economic issues may be taken into account in accordance with the Protocol),
 - Decision making within the time limits specified in the regulatory framework and in accordance with the provisions of involvement of stakeholders, and
 - A mechanism for feed back between these different steps.
- o Applying other measures according to the Protocol taking into account the work of the Inter-governmental Committee for the Cartagena Protocol on Biosafety (ICCP);
- o Support regional and sub-regional collaboration, including harmonisation of the implementation of national regulations;
- o Raise public awareness and improve information flow to the public on the issues involved around the release of LMOs to promote informed debate and to ensure transparency with respect to the regulation of LMOs.

Provide all stakeholders with an opportunity to be involved in the design and implementation of a NBF.

The project main activities are:

- Survey, analysis and creation of national database relevant to biotechnology, biosafety issues including legislation;
- Establishment of a National Coordinating Committee (NCC);
- Storage and management of gathered information to promote public participation;
- Creation of a database listing national experts in fields related to biotechnology and biosafety, risk assessment and risk management of LMOs;
- Organization of national workshops to initiate public participation targeted to relevant stakeholders including public and private sectors and national legislators for awareness purposes;
- Production of public awareness materials and publishing of inventories and guidelines.

The first draft NBF was reviewed by international experts and submitted in July 2005. An extension phase has been put in place to follow on stakeholders' participation in the finalization and fine-tuning of the various section of the NBF. The extension phase was executed by MOE, MOE and UNDP.

22 Top-up Biodiversity Enabling Activity (Phase II) (MoE/UNDP/GEF)

The MoE benefited from an additional funding (140.000 US\$) from the GEF to execute this project (April 2002-September 2005) which aims at assisting the MoE to further assess national capacity building needs and priorities for biodiversity conservation and to analyse institutional and functional capabilities and determine the necessary mechanisms to protect national biodiversity in accordance to the "National Biodiversity Strategy and Action Plan" recommendations, as well as the "Convention on Biological Diversity/CBD" guidelines. The Project was executed by the MOE and UNDP since 2002. In 2004, MoE and UNDP continued the execution of the project in collaboration with a team of experts" the Initiative for Biodiversity Studies in Arid Regions" (IBSAR) at the American University of Beirut (AUB).

Summary Project Objectives:

- Identification of Biodiversity priorities and assessment of national capacity building needs
- Preparation of the Addendum for the National Biodiversity Strategy and Action Plan.
- Preparation of CBD thematic reports
- Establishment of the Lebanese Biodiversity Clearing-House Mechanism
- Assessment of capacity building needs on taxonomy.
- Developing a database on national



With respect to terrestrial plant biodiversity, the **Darwin Initiative** funded between 1999-2002 a collaborative project between the American University of Beirut, the Royal Botanic Gardens, Kew and the University of Reading for this purpose. This project characterized the floristic richness of remained typical coastal vegetation communities.

24 Millennium Seed Bank Project (MSBP)

The Lebanese Agricultural Research Institute (LARI) and Kew's seed bank have been jointly seed collecting in Lebanon since 1996, before the MSBP was formally established. A formal agreement between LARI and RBG Kew was signed in July 2000, placing future work, as well as the collections from 1996, 1997 and 1998, under its terms and conditions. A key priority is the building of a national seed storage facility for which plans are advanced. Capacity building activities have included a technical attachment at the MSB facilities.

The past five collecting expeditions have shown remarkably little overlap in collected species. Increasingly, however, collecting will be targeted, with simultaneous consultation of local experts and collecting throughout most of the year. Orchids and endemic species of *Iris* and of *Cyclamen* are among the chief targets.

25 "Combatting Desertification in Lebanon" Project (CoDel)

The Ministry of Agriculture (MOA) with the technical and financial assistance of GTZ and UNDP started in June 2002 the execution of the project on "**Combatting Desertification in Lebanon**" (CoDel). In 2002, the Ministry of Agriculture issued a decision establishing a National Committee for the implementation of the Convention on Combatting Desertification. The National Committee includes representatives from the concerned ministries, academic and research institutions, UNDP, FAO and GTZ under the supervision of the Ministry of Agriculture. The project has finalized in June 2003 the preparation the Lebanese National Action Programme (NAP) for combating desertification which was developed to meet the obligations of Lebanon towards the UNCCD.



Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East" (Agrobiodiversity project)

With grant funding from the GEF (US\$1.5 million), Lebanon is part of a regional project (Jordan, Palestine, Lebanon, Syria) on the "**Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East**". This five-year project (1999-2004) is implemented by the Lebanese Agriculture Research Institute (LARI) and UNDP and brings together several international organizations. Implementing partners include several local academic and research institutions and NGOs. Many experts were involved in this project to characterize the floristic richness and study the genetic diversity and potential uses of selected species. The project aims at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing *in-situ* and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in mountainous areas in Lebanon. Project sites were selected following certain criteria and a farm socio-economic survey and botanical surveys were completed. GIS soil and land cover maps are almost completed. Several approaches were followed by the project in order to achieve short-term training for technical staff and farmers, and integrating the project activities with activities conducted by other institutions and other projects working in the same area. One fruit tree nursery was established in cooperation with Aarsal Rural Development Society and another nursery is planned to be established in Ham. Water-harvesting interventions were implemented at two project sites representing two agro-ecologies. Several training courses on water harvesting were conducted with participation of technical staff and farmers. Three *ex-situ* field gene-banks were established at LARI, the implementing institution. Legislation related to agro-biodiversity was reviewed. However, its focus was much more on the adaptation of local laws to international conventions (mainly CBD) than on the preparation of the ground for domestic policies that would allow the better use and management of natural resources by local populations. In the area of public awareness, many workshops introducing the project have been held. An agro-biodiversity training program for school teachers has been prepared. Numerous newspaper articles and leaflets have been issued. Hundreds of hats, T-shirts and calendars have been distributed. Four potential additional sources of income to the target communities were investigated: apiculture, local food processing, processing of fruits from wild species and eco-tourism.

27 Strategic Action Plan for the Conservation of biological diversity in the Mediterranean Region (SAP_BIO)

This project is for the preparation of a Strategic Action Plan for the Conservation of biological diversity in the Mediterranean Region. The SAP BIO project was implemented in 2002 by RAC/SPA within the framework of the UNEP/MAP. It aims at developing a Strategic Action Plan for the Conservation of marine and biological diversity in the Mediterranean Region. For that purpose, each Mediterranean country has developed a national report about marine and coastal biodiversity and national action plans for its conservation. Lebanon through the Ministry of Environment has developed its national report in 2002 and Lebanon/ Third National Report to the Convention on Biological Diversity

prepared five priority action plans in this regards and submitted them to RAC_SPA.

28 **"Design, Testing and Evaluating of Best Practices for *in situ* Conservation of Economically Important Wild Species"** PDF_B phase

The Ministry of Environment has executed the national part of a PDF-B (Project Development Funds) regional project entitled "**Design, Testing and Evaluating of Best Practices for *in situ* Conservation of Economically Important Wild Species**" funded by GEF (35.000 US\$). The project covers Lebanon, Egypt, Morocco and Turkey and is being implemented by the United Nations Environment Programme (UNEP) with the following supporting agencies: **FAO**: Food and Agriculture Organization of the United Nations, Rome, Italy. **Diversitas**: Paris, France. **IPGRI**: International **Plant** Genetic Resources Institute, Rome, Italy.

The PDF-B phase supported the design and preparation of a proposal for the full GEF project that will "**facilitate the *in-situ* conservation and management of economically important wild plant species**" in Lebanon, Egypt, Morocco and Turkey. During this phase, The Plant species and their locations and sites were identified by the four participating countries as important to agriculture or forestry or to have some other economic importance, (such as medicinal or aromatic species) in natural or semi-natural habitats and in traditional farming systems.

The Faculty of Sciences at the Lebanese University was assigned the responsibility of the overall execution of the PDF-B national level process in Lebanon on behalf but under the overall supervision and coordination of the Ministry of Environment in 2004.

The regional proposal for the full project was finalized by FAO in September 2005 and will be submitted to GEF soon for approval.

29 ***Environmental Impact Assessment Unit***

During 1997-2002, the EIA Unit was funded by World Bank/ MOE) to prepare executive decrees for assessing the environmental impacts of proposed projects.

The unit has worked at three levels, namely legal, institutional and capacity building. At the legal level it has prepared draft decrees that will be submitted to the council of Ministers for action. At the institutional level it has coordinated all EIA aspect within the MOE and has prepared draft guidelines for quarries, marinas and wastewater. The unit has also prepared a fact sheet for all EIAs that entered the ministry system. As for capacity building the unit has prepared EIA for each sector and insure awareness to all concerned groups. With respect to the coast, a manual is currently available for marinas.

30 ***Hazardous Waste Program***

During 2001-2002, This Program was funded by METAP/MOE and is responsible for reviewing existing studies on hazardous waste at the MOE in order to provide accurate information about the nature and source of hazardous waste, particularly those related to industrial and agrochemical waste.

The program is currently developing legislation and providing assistance to industry by proposing guidelines for hazardous waste disposal. The program has developed three decrees related to "medical waste, industrial and hazardous waste, and permitting and authorization dealing with hazardous waste". The program is also in the process of assessing the quantity of hazardous waste.

31 ***National land use planning Project***

This project, initiated in 2002, covers the preparation of a National Land Use Plan, in coordination with the General Directorate of Urban Planning. This study was requested from CDR by a decision of the Council of Ministers. The study aims to prepare land use maps of the Lebanese territory based on satellite images and aerial photographs and will evaluate all demographic and social data, economic activities, employment and environmental and urban development issues. Based on this work, a number of development scenarios will be submitted to the Council of Ministers. The study will form the basis for land development in Lebanon.

32 ***Integrated Coastal Management between Jbeil/Amsheet (Lebanon) and Latakia (Syria)***

The project is financed by the European Union under the MEDA Regional Indicative Programme-SMAP, and coordinated by a private company (Envirotech, Ltd.) under the supervision of the Ministry of Environment (Lebanon) and the Ministry of Local Affairs and Environment (Syria) with the external assistance of SIDI/EUROECO (Italy).

The project started in November 3rd, 2000 and ended in November 3rd, 2005.

The purpose of the project is to develop and introduce an integrated coastal management plan in the project area.

The project objectives are to introduce Geographic Information System (GIS) as a decision-making tool for coastal planning; promote key elements of an integrated coastal management plan through designing and implementing Demonstrative Actions relating to Wastewater Treatment and Tourism in Lebanon, and

Solid Waste Management and valorization of SMEs in Syria; provide an economic assessment for the replication of sustainable Demonstrative Actions along the Coast and build the capacity of concerned public authorities and local communities in sustainable coastal management.

33

Sustainable Hunting Project

The project is financed (748.000 Euros) by the EC-LIFE Third Countries, DBW, AEWA and UNDP. Being regional it covers Middle East and North Africa and implemented by BirdLife Secretariat, SPNL, AAO, AEWA and Euronatur. The project started in Nov., 2004 and is meant to end in Nov. , 2007.

The purpose of the project is to:

- Build up capacity for sustainable hunting practices
- Propose Code of Practice and guidelines to be adopted by target countries
- Education and awareness
- Compliance with relevant international agreements

B. PRIORITY SETTING, TARGETS AND OBSTACLES

Box II.

Please provide an overview of the status and trends of various components of biological diversity in your country based on the information and data available.

Most of Lebanon's features interacting with the biodiversity were listed in the First National Report (FNR) to CBD (surface area, biogeographical situation, geomorphological regions, topography, geology, historical human settlements, centers for plant biodiversity, number of fauna and flora species per taxa, etc.). For basic information, the reader should preferably refer to the status of Lebanon's biodiversity in the FNR.

The Biodiversity country study (prepared in 1996) serves as a valuable source of information of national biodiversity. But since then, the many surveys and monitoring activities that were conducted through academic and research institutions, projects and NGOs proved to be very efficient to updating the lists of flora and fauna but they covered target sites and were not implemented at national level. With the effort of observations, several species were recorded as not found whilst many other species were recorded as new for Lebanon. The number of bird species which increased from 256 in 1996 to 383 (44%) in 2005 is an example. Vascular plants are the best-known group, and practically most of the species were assessed. Other well-known groups of species include the partly assessed vertebrates (mammals, birds, reptiles, amphibians, fish), butterflies, dragonflies, damselflies and freshwater macro-invertebrates. The least well-known categories include algae, phytoplankton and most other insect groups, mainly due to lack of experts in these fields. However, the establishment of a national database is expected to update the lists of species and probably their habitats in Lebanon together with assessment and evaluation.

The National Biodiversity Strategy and Action Plan (NBSAP, prepared in 1998) as well as its addendum which was prepared in 2005 to fill the gaps of the NBSAP, remain the reference of base for addressing CBD issues in Lebanon. The NBSAP served as the basic framework by which biodiversity conservation and its sustainable utilization has been structured while the NBSAP addendum has taken into consideration the thematic work programs and cross cutting issues defined by the CBD and aligned them with those addressed in the NBSAP. In addition, Lebanon- through the addendum and in response to the more recent obligations related to the 2010 biodiversity targets addressed in Decision VI/26 and VII/30 of the Conference of Parties – has revised and aligned its NBSAP according to the framework for goals and targets endorsed in COP decision VII/30 in order to highlight Lebanon's efforts towards 2010 commitments.

In order to check the progress made towards the implementation of the CBD through the evaluation of the NBSAP outcomes, the Second National Report (2002) has done an alignment of the Actions of the NBSAP with CBD thematic areas and cross cutting issues and took a first view at progress achieved. The NBSAP addendum (2005) has done a second review of the status and progress of Lebanon's NBSAP objectives and actions with respect to the CBD articles and thematic areas.

The Second National Report summarizes the findings by highlighting Lebanon's progress with respect to the CBD objectives indicating that Lebanon had many programs and initiatives in place that address the first objective of the CBD, "conservation of biodiversity", however the second objective "sustainable use" has received less attention and the third objective "fair and equitable sharing of the benefits" were severely lacking. While in 2005, the issue of sustainable use has been further addressed and integrated in national legislation and different projects, the "fair and equitable sharing of the benefits arising from the utilisation of genetic resources" was initiated through the development of a recent draft national law that would regulate this issue.

The second National Report highlighted areas of deficiencies which included taxonomy, monitoring, alien species, *ex-situ*, sustainable use, incentive measures, genetic resources, technology transfer, technical and scientific cooperation, and biotechnology and information exchange.

On the other hand, the report showed a positive progress in the following areas: *In situ* – conservation, research, training, awareness and education and EIA.

However, the second update of the progress on the NBSAP objectives done in 2005 showed a progress in environmental legislation, sustainable use and biotechnology since a National Biosafety Framework was developed and work will be initiated for its implementation as well as exchange of information will

be enhanced by the establishment of the BCH which will be operational soon.

Following the development of the NBSAP more than 30 national and regional projects were executed in Lebanon, implementing as such the provisions of many CBD Articles. They covered subjects like planning for biodiversity, conserving coastal natural resources, climate change, management of Hazardous Wastes, mapping land cover, enhancing permanent environmental awareness unit, *in-Situ* Conservation for Sustainable use of Biodiversity, building capacity and enhancing communications, establishment of an Environmental Impact Assessment System, promoting cleaner production investments, technology development and transfer; conserving globally endangered species and their habitats, planning and development of environmental projects and their follow up, programmes for protection of the ozone layer, Strategic Environmental Assessment & Land Use Planning, Integrated Management of Cedar Forests, identifying and institutionalizing proper and approved structure for the management of protected areas, developing a National Biosafety Framework, updating the NBSAP, establishing seed bank, Combating Desertification, Conserving and Sustainable Using of Dryland Agrobiodiversity, *in situ* Conservation of Economically Important Wild Species, preparing a national land use plan, establishing national Biodiversity and biosafety clearing house, etc.

Increasingly implementation initiatives emphasize Sustainable Development objectives and to some extent the ecosystem approach as a way of working.

While the reporting about species and habitats has showed positive trends, progress in some areas appeared to be slower than anticipated. There are neither specific action plans for known endangered species nor a national red list in Lebanon. On the other side, it should be stressed that the actions undertaken in protected areas do not always deal with aspects that directly affect marine vegetation. This is the case for the nature reserves in the Palm Islands and Tyre Coast, where the 'marine vegetation' element seems to be ignored. Another major problem is the low level of knowledge about the occurrence of habitats and species, as compared to the situation on land.

Maintenance of coastal biological diversity faces major challenge of economic development and housing. Very high pressure both political and financial is put on protected areas in coastal zone. Maintenance of coastal zone is to a great extent responsibility of local municipalities not always having enough capacity to withstand high pressure.

It is estimated that 74 percent of Lebanon's surface was covered in the past by forests but the recent *National Forest and Tree Inventory and Assessment in Lebanon* shows that approximately 13.3% of the country's surface area are covered by forests and that the annual deforestation rate is estimated 0.4%. However, in 2001, the Lebanese government allocated a 17 Million USD fund issued through the national budget law, "Loi Programme" number 326 date 28/6/2001, and scheduled over five years for the execution of reforestation projects at the national level. Between these two processes and in the present absence of a national action plan for forestry, the causes of deforestation remain active due to over-exploitation of wood, fires, grazing in cut areas and agricultural expansion.

Maintenance of biodiversity in agricultural landscape is another issue potentially becoming an ongoing problem since the introduction in the middle of the last century of modern agriculture systems into the country which increases the agriculture land surface area to more than 25% of the country's surface area, usually to the detriment of marginal lands and some rangelands. The excessive use of agrochemicals represents a direct polluting factor. It leads to contamination of ground and surface water as well as food products and marine life. In intensive agriculture, fertilizers are widely used. They are available at relatively low cost and are promoted by the private sector (vendor-driven). Their excessive use leads to soil and water contamination in many places and seriously damages biodiversity.

Lebanon has a history of land use to the point that the once extensive swamps of the Beqaa Valley shrunk to 280 ha. at Aammq area in the early 20th century, due to drainage for agriculture. The only other significant inland wetlands are man-made lakes, notably Qaraoun Reservoir (1,000 ha), a large storage reservoir on the Litani River which is sufficiently large to attract numbers of migratory waterfowl, and the much smaller Tanayel Lake (6 ha) in the same valley. There are also hundreds of springs which feed 17 rivers year round as well as 23 seasonal rivers. Apart from the Aammq Swamp which is protected by private initiative, the other Lebanese inland and coastal freshwater bodies are under severe stress both in terms of water demand and water pollution from industry, agriculture and untreated sewage. There is at present no concrete plan for their sustainable management, a major reason for decline in many species.

The main causes of biodiversity loss or decline were reported as habitat loss and degradation, and pollution. Agriculture and urban expansion were the most important underlying cause of habitat loss/degradation. Much work has been carried out to reduce the negative impacts of agriculture on biodiversity, through promotion of organic farming, use of native fruit trees, landraces, rangeland rehabilitation, fattening units, and increase of awareness in rural areas. It is too early to identify yet whether these initiatives have had the desired effect.

The biggest constraints to progress were seen as research and survey, managements and funding.

Finally, there is still much missing in terms of available data, distribution of species, breeds and varieties. This lack of knowledge on diversity, status of some species and critical habitats seriously complicates the efforts of conservation and act as constraints to the conservation of biodiversity in the country.

Priority Setting

1. Please indicate, by marking an "X" in the appropriate column below, the level of priority your country accords to the implementation of various articles, provisions and relevant programmes of the work of the Convention.

Article/Provision/Programme of Work	Level of Priority		
	High	Medium	Low
a) Article 5 – Cooperation	X		
b) Article 6 - General measures for conservation and sustainable use	X		
c) Article 7 - Identification and monitoring		X	
d) Article 8 – <i>In-situ</i> conservation	X		
e) Article 8(h) - Alien species			X
f) Article 8(j) - Traditional knowledge and related provisions		X	
g) Article 9 – <i>Ex-situ</i> conservation			X
h) Article 10 – Sustainable use of components of biological diversity	X		
i) Article 11 - Incentive measures		X	
j) Article 12 - Research and training	X		
k) Article 13 - Public education and awareness	X		
l) Article 14 - Impact assessment and minimizing adverse impacts	X		
m) Article 15 - Access to genetic resources	X		
n) Article 16 - Access to and transfer of technology		X	
o) Article 17 - Exchange of information		X	
p) Article 18 – Scientific and technical cooperation	X		
q) Article 19 - Handling of biotechnology and distribution of its benefits		X	
r) Article 20 - Financial resources	X		
s) Article 21 - Financial mechanism	X		
t) Agricultural biodiversity		X	
u) Forest biodiversity	X		
v) Inland water biodiversity		X	
w) Marine and coastal biodiversity	X		
x) Dryland and subhumid land biodiversity		X	

y) Mountain biodiversity	X		
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Challenges and Obstacles to Implementation

2. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the provisions of the Articles of the Convention (5, 6,7, 8, 8h, 8j, 9, 10, 11,12, 13, 14, 15,16, 17, 18, 19 and 20)	
3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Articles																	
	5	6	7	8	8h	8j	9	10	11	12	13	14	15	16	17	18	19	20
a) Lack of political will and support	1	2	3	1	1	1	2	2	2	0		1					3	
b) Limited public participation and stakeholder involvement	1	1	3	2	1	2	3	2	2	1		3		3	3		2	
c) Lack of mainstreaming and integration of biodiversity issues into other sectors	3	3	3	1	1	1	2	3	3	1		2	2	3	3	3	1	2
d) Lack of precautionary and proactive measures	1	2	3	0	2	2	3	3	2	1				3	3		1	
e) Inadequate capacity to act, caused by institutional weakness	1	3	3	0	2	2	3	3	3	1		2	2	2	1	2	2	2
f) Lack of transfer of technology and expertise	1	1	3	1	2	2	2	2	2	1		2		2	2	2	2	2
g) Loss of traditional knowledge			2	1	1	2	2	2		NA		3		3	3	3	2	3

h) Lack of adequate scientific research capacities to support all the objectives	2	3	3	2	3	1	2	2	1	2		2	1	2	2	2	3	2
i) Lack of accessible knowledge and information	1	1	3	1	3	2	2	2	2	1		2	3	2	2	2	2	2
j) Lack of public education and awareness at all levels	1	1	2	1	2	2	2	3	3	NA		2		2	2	2	3	2
k) Existing scientific and traditional knowledge not fully utilized	2	2	3	1	2	3	3	3	2	1		2		2	2	2	3	2
l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	1	2	3	1	2	2	2	3	3	NA							2	
m) Lack of financial, human, technical resources	1	2	3	2	3	3	3	3	3	1		2		2	2	2	2	2
n) Lack of economic incentive measures	2	2	3	2	3	2	3	3	2	2		2		2	2	2	3	2
o) Lack of benefit-sharing	3	3	3	2	3	2	3	3									3	
p) Lack of synergies at national and international levels	1	2	3	2	2	2	3	3	2	0		3	0	3	3	3	2	2
q) Lack of horizontal cooperation among	1	2	3	1	2	2	3	3	2	0		2	2	2	2	2	3	2

stakeholders																		
r) Lack of effective partnerships	2	2	3	1	2	3	3	2	2	0			3	2			3	
s) Lack of engagement of scientific community	2	2	3	2	2	2	2	2		1		1	0	1	1	1	3	1
t) Lack of appropriate policies and laws		2	3	1	2	3	3	1	1	0			3				2	
u) Poverty	NA	NA		1	NA		NA	1		NA							3	
v) Population pressure	NA	NA	3	2	2	2	NA	3	2	NA		2	2	2	2	2	2	2
w) Unsustainable consumption and production patterns	NA	NA	3	1	1	NA	2	3		NA			2				3	
x) Lack of capacities for local communities	2	2	3	2	3	2	3	2	2	NA			3				2	
y) Lack of knowledge and practice of ecosystem-based approaches to management	NA	3	3	2	3	2	2	2	2	2		3		3	3	2	3	
z) Weak law enforcement capacity	NA	3	3	3	2	2	3	3	3	NA		2	3	2	2	2	3	2
aa) Natural disasters and environmental change	NA		1					1		NA	NA						1	
bb) Others (please specify)																		

2010 Target

The Conference of the Parties, in decision VII/30, annex II, decided to establish a provisional framework for goals and targets in order to clarify the 2010 global target adopted by decision VI/26, help assess the progress towards the target, and promote coherence among the programmes of work of the Convention. Parties and Governments are invited to develop their own targets with this flexible framework. Please provide relevant information by responding to the questions and requests contained in the following tables.

Lebanon has developed its National Biodiversity Strategy and Action Plan (NBSAP) in 1998 through the Biodiversity Enabling Activity project funded by the GEF and implemented by the Ministry of Environment in collaboration with the UNDP.

The goals and targets that are identified in the NBSAP addendum 2005 cover the conservation, protection and sustainable use of the biological diversity of different ecosystems, habitats and biomes.

In 2005, the Ministry of Environment, through the GEF Top-Up Biodiversity Enabling Activity project, has developed an addendum for the Lebanese NBSAP based on national stakeholders' consultation and a review of ongoing national projects and consultancies as well as the CBD guidelines and strategic goals.

The purpose of the 2005 addendum is to elaborate expressed national needs and aspirations under the umbrella of the CBD to ensure that the Convention is tackled in Lebanon by all public and private authorities and stakeholders.

Although the role that Lebanon is playing in the Convention on Biological diversity is not yet a key role, the government's commitment to the Convention is evident through the various projects and initiatives it has attracted to fulfill its obligations towards the Convention.

In response to the more recent obligations related to the 2010 targets addressed in Decision VI/26 and VII/30 of the Conference of Parties, Lebanon- through the addendum- has revised and aligned its NBSAP according to the framework for goals and targets endorsed in COP decision VII/30.

The NBSAP addendum 2005 includes action sheets for the global targets and goals. A specific sheet was developed for each national action in relation to the global target and includes the following data: the expected output, the proposed activities, the time frame, the estimated budget and the human resources needed.

The proposed activities were categorized according to the following areas: Research, Policies and legislation, National capacity, Participation of Civil Society, Involvement of Public Sector, Economic Opportunity and Monitoring & indicators. (A model of the Action Sheet is provided in appendix1).

The methodology adopted for the preparation of the Lebanese Addendum includes:

1. A review of the NBSAP prepared in 1998 in line with a one year GEF funded project,
2. A consolidation of objectives, goals and actions of the 1998 Lebanese NBSAP,
3. An alignment of the existing thematic work programmes of the 1998 Lebanese NBSAP with the CBD thematic areas programmes
4. An alignment of the cross cutting issues of the CBD with those addressed by the 1998 Lebanese NBSAP
5. An alignment of the 1998 Lebanese NBSAP goals and targets with the 2010 global biodiversity targets
6. The 2005 addendum used an approach to mainstream the conservation and sustainable use of biological resources across all sectors of the national economy and policy-making framework as per article 6 and article 10 (a) of the CBD

7. An update of the long term plans and vision according to the evolution of biodiversity conservation and sustainable use concepts in addition to the national needs and gaps that occurred since 1998
8. A public participation process to better capture diversity in perspectives and scopes for biodiversity conservation and sustainable use.

Box III.

Goal 1	Promote the conservation of the biological diversity of ecosystems, habitats and biomes.		
Target 1.1	At least ten percent of each of the world's ecological regions effectively conserved		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
The target 1.1 was incorporated in the 2005 NBSAP addendum 2005, however it covers only one national action according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP as follows: Objective: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity: - Assess the present status of agrobiodiversity at the national level.			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action mentioned in the section above is related to Agriculture biodiversity.
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target is incorporated into the NBSAP addendum 2005.			
IV) Please provide information on current status and trends in relation to this target.			
The NBSAP addendum 2005 was developed and finalized in September 2005. The Agro biodiversity project is conducting several survey activities on targeted herbaceous species and wild fruit tree species, analyzing the collected data and documenting them in papers, reports and newsletters that are available at the website: www.lari.gov.lb/agrobio/documentation/asp The project established several demonstration sites in Aarsal and Nabha to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation; increasing as such the area protected in dryland ecosystems which are known as especially outstanding for their within-species diversity. The Society for the Protection of Nature in Lebanon (NGO- partner of BirdLife International) is currently surveying all biogeographical zones within Lebanon to identify the Important Bird Areas.			

Already some of the surveyed sites have met with the criteria of IBAS and will add to the ecological regions effectively conserved.

V) Please provide information on indicators used in relation to this target.

A specific sheet was developed for the national action identified in relation to this target; it includes the following identified indicator and monitoring: "**Database established and readily available**"

VI) Please provide information on challenges in implementation of this target.

Challenges include the lack of research and monitoring data on either the current state of biodiversity, or the effectiveness of the NBSAP. This situation is expected to improve as a result of the recently completed and ongoing extensive research programmes.

In spite of reasonable success in the implementation of the NBSAP and other favorable trends, the measures within the NBSAP alone will not be able to halt or significantly slow the declining trend in biodiversity in Lebanon by 2010. This long-term decline has been difficult to reverse, due to factors such as the increasing uniformity of natural habitats after long periods of intensive land use.

Wide-ranging co-operation and additional resources are particularly needed to develop biodiversity indicators and measures, the monitoring and assessment of the state of biodiversity, and data registers and systems. From the perspective of the social acceptability of the preservation of biodiversity, it is very important to find economic and employment opportunities related to biodiversity, and to find ways to publicize reliable data to help the public to understand both the ecological grounds for maintaining biodiversity, and the related socio-economic benefits.

Research into the linkages between biodiversity and socio-economic factors should be integrated into the new national and sectoral forthcoming plans.

VII) Please provide any other relevant information.

Box IV.

Target 1.2	Areas of particular importance to biodiversity protected		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target	X		
c) Yes, one or more specific national targets have been established			
Please provide details below.			
The target 1.2 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:			
Objective 1: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:			
<ul style="list-style-type: none"> - Characterize and classify protected areas (mapping, protection, rehabilitation, updating inventories) - Manage sites according to the local needs and requirements 			
Objective 2: Protect coastal and marine ecosystems and biodiversity:			
<ul style="list-style-type: none"> - Establish nature reserves and marine parks representing major ecogeographical areas 			
Objective 3: Provide stability to permit the establishment of ecological equilibrium			
<ul style="list-style-type: none"> - Protection of remarkable natural habitats, characterized by their ecology - Creating land zoning maps 			
Objective 4: To save, use and study biodiversity in fresh water ecosystem			
<ul style="list-style-type: none"> - Mountain lakes have to be extended. All appropriate areas should be included - Wetland conservation areas should be established and aquaria set-ups must be implemented 			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details

a) Agricultural			
b) Inland water	X		The national actions mentioned in the section above cover habitats in forest, mountain, marine and coastal ecosystems in addition to dry and subhumid lands.
c) Marine and coastal	X		
d) Dry and subhumid land	X		
e) Forest	X		
f) Mountain	X		
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan	X		
c) Yes, into sectoral strategies, plans and programmes	X		
Please provide details below.			
<p>As mentioned above, the target 1.2 is incorporated into the NBSAP addendum 2005.</p> <p>It is also incorporated in the Protected Areas goals and strategies developed by the Ministry of Environment, especially the subsidiary goal 4.1 which aims at conducting general survey to identify all areas of importance to biodiversity and which worth conservation in all available ecosystems. The activities under this goal describe the mechanism to be adopted during the implementation process.</p>			
Please provide information on current status and trends in relation to this target.			
<p>Since 1996 there has been an increasing focus on biodiversity and development of new methodologies to map biodiversity in Lebanon. This together with more harmonized ways to protect biodiversity within different ecosystems in Lebanon, provides a new basis to assess the further needs for protecting important areas for biodiversity.</p> <p>Protected areas in Lebanon are continuously increasing, from three in 1996 to ten in 2002, with continuous requests submitted to the Ministry of Environment (MoE) for the declaration of new sites.</p> <p>Till present, the Ministry of Environment (MoE) has declared by law, seven locations as nature reserves, and an additional one by ministerial decision. All of them cover 1.8% of the Lebanese territory. The MoE has also executed two projects related to protected areas conservation. The first project "Protected Areas Project" was funded by GEF and aimed at the conservation of Al Shouf Cedars Nature Reserve, Horsh Ehdén Nature Reserve, and Palm Island Nature Reserve. The second project "The MEDWetCoast" was funded by the FFEM and aim at the conservation of coastal zones and wetlands, it cover two sites the Tyre Coast Nature Reserve and the Ammiq Wetland.</p> <p>Lebanon in 2003 started within the protected areas project and the MedWetCoast projects an evaluation process on biodiversity and protection, and mapped the biodiversity (fauna and flora) of the existing nature reserves, using GIS technology.</p> <p>Due to the increasing number of protected areas there arose the need for a management structure capable of handling the requirements for an integrated management of protected areas. The current management structure involves the Ministry of Environment, local community representatives and local management teams. This structure has so far achieved conservation on the sites and is a model of protected area management being more and more adopted worldwide. This structure however, has weaknesses and can become totally dysfunctional.</p> <p>Responding to the need for an improved and more capable management structure for protected areas, The Ministry has acquired the approval of the European Commission for the execution of a project entitled "Stable Institutional Structure for Protected Areas Management" (SISPAM). The project aims at finding the best institutional structure to manage the protected areas. The project aims also at ensuring the financial, legal and technical sustainability of the structure and the protected areas.</p> <p>The SISPAM project would set-up an operational structure, e.g. a protected areas agency or para-</p>			

institutional directorate, for the smooth management and planning for protected areas issues. The legal, structural, institutional, financial and human aspects will be assessed and dealt with in a way to ensure stable status and sustainable resources for the protected areas. A Protected Areas Management Plan will be implemented on a one-year time-frame for the sake of trial and fine-tuning. The proposed structures would thereof have been tested and approved by a broad set of stakeholders.

In addition to the nature reserves, the Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in facto. Fifteen forests were declared protected explicitly by ministerial decisions issued from the Ministry of Agriculture under the amended Forest Code. However the Ministry of Agriculture is in need of capacity building to effectively monitor recreational and economic activities or natural catastrophes within the reserves.

Furthermore, the MoE is continuously issuing ministerial decision to classify important natural sites, until present there are many ministerial decisions declaring valleys, mountain tops and mainly river mouths under the protection of the Ministry of Environment. However, these decisions need a mechanism for proper enforcement and monitoring.

Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- Red list produced
- Number of identified needs that are fully or partially fulfilled through regulated access to protected areas
- Land price
- Number of sites protected
- Laws/decrees drafted
- New sites developed for responsible tourism
- Increase the balance of water
- Number of wetlands protected

Please provide information on challenges in implementation of this target.

Regarding identifying important areas for biodiversity, Lebanon needs the necessary funds to launch a national mapping program on biodiversity. In such program, one of the aims should be that all municipalities should map their biodiversity and prioritize the most important areas related to species and habitats. In addition, there is a need to establish a National database to which all mappings from different projects can be imported.

How to protect and manage all the important areas provided through mapping programmes will also be a challenge in a more administrative way.

Please provide any other relevant information.

Box V.

Goal 2	Promote the conservation of species diversity	
Target 2.1	Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
The target 2.1 is incorporated in the 2005 NBSAP addendum 2005. Based on the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP it covers the following national objectives and actions:		

- Objective1: Provide stability for the ecosystems to permit the establishment of ecological equilibrium
- Rehabilitation of abandoned or degraded zones
- Objective2: Protect endemic species by utilizing them in urban landscape
- Join efforts with municipalities and NGOs to use and conserve local germplasm

The target 2.1 is partially incorporated in the subsidiary goal 4.6 of the Protected Areas Goals and Strategies developed by the Ministry of Environment where only the marine turtle populations are given special attention.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal			The national actions mentioned in the section above cover biodiversity in terrestrial ecosystems which include forest, mountain, dry and subhumid lands.
d) Dry and subhumid land	X		
e) Forest	X		
f) Mountain	X		

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The target 2.1 is incorporated into the NBSAP addendum 2005 and partially addressed by the subsidiary goal 4.6 of the Protected Areas Goals and Strategies developed by the Ministry of Environment.

IV) Please provide information on current status and trends in relation to this target.

- Through the protected areas project the Ministry of Environment focuses on the restoration, maintenance and reduction of decline of populations of species of selected taxonomic groups, using a methodology based on prioritizing the species which merit conservation starting from globally threatened species (Highest priority) to regionally threatened, endemic, nationally rare and finally noteworthy species. The same is adopted by the MedWetCoast and the Camp Project.
- The managing teams of the protected areas are mitigating identified impacts on threatened species through elimination of existing and avoidance of potential threats.

Some initiatives are implemented in specific sites:

- A plan is currently implemented on Palm Islands Nature Reserve to create an ecological balance

between Yellow-legged Gull and the former breeder threatened Audouin's Gull through several actions decreasing the dominance of YLG so that the second species can breed again on PINR.

- A real estate company is gradually implementing 64 actions of a management plan that was specifically developed in 2003 to restore the avian species of Beirut Central District.
- Another private organization (Safadi Group) started on 28/7/2005 a study to restore swifts and swallows in Tripoli and Al Mina cities.

However, The status and trends differ between species and taxonomic groups. For some species monitoring programs in protected areas showed both positive and negative trends regarding this target.

V) Please provide information on indicators used in relation to this target.

The indicators set in the NBSAP addendum 2005 for the national actions in relation to the target 2.1 are the following:

- Green areas increased
- Number of sites rehabilitated
- Number of municipalities owned outdoor spaces that preserve and reintroduce native species

VI) Please provide information on challenges in implementation of this target.

- Needs for necessary research and for specialized people and technical expertise.

VII) Please provide any other relevant information.

Box VI.

Target 2.2	Status of threatened species improved		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
The target 2.2 is incorporated in the 2005 Lebanese NBSAP addendum 2005. However it covers only one national action according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP as follows: Objective: To save, use and study biodiversity in fresh water ecosystem - Establish a database system for fresh water richness and endangered species			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water	X		The national action in relation to the target 2.2 mentioned above is related to fresh water biodiversity

c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target 2.2 is incorporated into the NBSAP addendum 2005.			
Please provide information on current status and trends in relation to this target.			
<p>The Ministry of the Environment and the Protected Areas Project have allocated resources during the period 1997–2004 for use in projects, reports, and planning related to the management and protection of threatened species in protected areas. The recipients of these funds included the governmental appointed committees of several nature reserves, NGOs, universities, and consultants.</p> <p>The law of hunting includes several articles for species protection outside the protected areas and regulates species protection. Forestry and Agriculture sectoral programmes encourage maintenance of complex of biological diversity, species being part of this complex.</p> <p>Within the agrobiodiversity project many species targeted by the project are forage legumes, wild fruit trees and medicinal plants. These species are under threat mainly due to overgrazing. The project established several demonstration sites in Aarsal and Nabha to show the effect of protection, reseeded with native legumes and water-harvesting techniques on rangeland rehabilitation. In addition, the agrobiodiversity project continued for the fourth year the support of the fruit trees nursery operated by Aarsal Rural Development Association (ARDA) for the production of around 9,000 seedlings/year of wild fruit trees and plantlets (from cuttings) of local varieties of several targeted species. These seedlings are distributed to the farmers and used in reforestation activities.</p> <p>Few target threatened species were protected through ministerial decisions issued by the Minister of Agriculture.</p> <p>As for sectoral strategies and programs, the protection of species is integral part of different habitats protected.</p>			
Please provide information on indicators used in relation to this target.			
The indicator set for the national action in relation to this target is the following:			
- "Production of a database in freshwater biodiversity by the NCSR"			
Please provide information on challenges in implementation of this target.			
<p>Species protection is looked upon as integral part of habitat conservation in most of the sectoral strategies. This is both good and dangerous. Some species might not be paid enough attention, especially outside protected areas. At the same time, maintenance of species in their natural conditions is favored, leading to better success in their maintenance. Anyway, protection of threatened species is mainly applied in the protected areas and there is a need for protection of threatened species outside the protected areas as well.</p> <p>Furthermore, the challenges in implementing this target include: lack of national red lists of threatened species and lack of species action plans.</p>			
Please provide any other relevant information.			

Box VII.

Goal 3	Promote the conservation of genetic diversity		
Target 3.1	Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target		X	
c) Yes, one or more specific national targets have been established			
Please provide details below.			
The target 3.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :			
Objective 1: To protect agricultural ecosystems and associated biodiversity			
- Establish a central gene bank where different ex-situ conservation activities are performed including breeding			
Objective 2: Expand and manage the protected areas system in terrestrial, marine and fresh water environments			
- Locate rehabilitation nurseries within the protected areas and use indigenous species			
Objective 3: Protect endemic species by utilizing them in urban landscape			
- Establish germplasm banks including cryo-preservation and tissue culture to conserve living material			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action set under objective 1 mentioned in the section above is related to Agriculture biodiversity.
b) Inland water	X		
c) Marine and coastal	X		
d) Dry and subhumid land	X		The national action set under objective 2 mentioned in the section above is related to terrestrial, marine and fresh water ecosystems
e) Forest	X		
f) Mountain	X		
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan		X	
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target 3.1 is incorporated into the NBSAP addendum 2005.			
IV) Please provide information on current status and trends in relation to this target.			
The Law for the Protection of the Environment calls for an elaboration of a system for controlling access to genetic resources in Chapter 8 concerning management of natural resources and conservation of biological diversity.			
The Lebanese Agricultural Research Institute's programme aims to help safeguard valuable local livestock breeds and to preserve the genetic stock of local crop varieties.			
The Agrobiodiversity project has conducted a study on the present status (2000) of agrobiodiversity and genetic resources in the Beqaa dryland and developed a national programme			

(2003) for the genetic resources in Lebanon focusing mainly on legal issues.

V) Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- Number of native species stored in seed banks
- Number of accessions in seed banks
- Small income generated
- Number of nurseries/ number and type of planted species
- Number of germplasm labs
- Number of conserved native species
- Number of staff involved in this field
- Level of equipment used or bought

FAO indicators for crop genetic diversity are also considered.

VI) Please provide information on challenges in implementation of this target.

- A broader coverage of species and more coordinated work.
- A need to integrate the relevant indigenous and local knowledge

VII) Please provide any other relevant information.

Box VIII.

Goal 4	Promote sustainable use and consumption.	
Target 4.1	Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity	
National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
<p>The target 4.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:</p> <p>Objective 1: Protect agricultural ecosystems and maintain native biological diversity:</p> <ul style="list-style-type: none"> - Support research on sustainable use of resources, applied agro biodiversity, grazing pressure and biological diversity, and encourage research on native forage crops <p>Objective 2: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:</p> <ul style="list-style-type: none"> - Implement environmental education in schools - Develop agro biodiversity extension programs and training centers <p>Objective 3: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <ul style="list-style-type: none"> - Support environmental and socio-economic research - Establish a national database for crops, weeds, and livestock, including a database for tracking livestock migration <p>Objective 4: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:</p> <ul style="list-style-type: none"> - Introduce sustainable harvesting into some protected areas like honey production <p>Objective 5: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:</p> <ul style="list-style-type: none"> - Establishing ecological tourism associated with public awareness and environmental education - Develop, finalize and monitor an exhaustive database - Reforestation, along with related issues as forest management, plant nurseries, choice of species to be used in this process - Encouraging and supporting research projects (fundamental and applied) related to the specific goals set for the development of terrestrial ecosystems 		

- Scientific and technical studies to promote development and sustainable use of medicinal plants and melliferous species
- Objective 6: Manage forests and ranges for productivity and sustainability
- Choose the optimal criteria (age and diameter) for a sustainable use
 - Determine the ideal structure of forest tree populations
- Objective 7: Protect endemic species by utilizing them in urban landscape:
- Plant roadsides with endemic species
 - Cover land fills, roadsides, roofs, balconies, etc. ... with local green vegetation
- Objective 8: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:
- Study the fishing sector scientifically (practices, needs, potential, and stocks)
- Objective 9: To save, use and study biodiversity in fresh water ecosystem:
- Implement public awareness programmes in water use, quality and saving
 - Research, building of capacities and studies on fresh water biodiversity should be expanded and supported

National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		The national actions set under objectives 1,2 and 3 mentioned in the section above is related to Agriculture biodiversity
b) Inland water	X		The national actions set under objective 9 mentioned in the section above is related to fresh water ecosystems
c) Marine and coastal	X		The national action set under objective 8 mentioned in the section above is related to marine ecosystems
d) Dry and subhumid land			
e) Forest	X		The national actions set under objective 6 mentioned in the section above are related to forest ecosystems. Forest ecosystems are covered as well by the national actions set under objective 4 and 5
f) Mountain	X		The national actions set under objectives 4 ,5 and 6 mentioned in the section above are related to terrestrial biodiversity which cover mountain ecosystems

Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The target 4.1 is incorporated into the NBSAP addendum 2005 and into the Protected Areas Strategy where harvesting or other uses of living resources shall not threaten species or populations.

Please provide information on current status and trends in relation to this target.

Some activities are carried out to promote biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity, mainly through legal measures, within the activities of international funded projects and through some initiatives executed by academic institutions and NGOs:

- The new draft framework law for the protected areas which is pending endorsement allows sustainable use of biodiversity in the nature reserves.
- The protected areas and the MedWetCoast projects promote the wise use of living resources inside the nature reserves: The Protected areas Project becomes progressively supportive of sustainable utilization, the basic measures that were taken include marketable products (traditional food, handicrafts etc.) produced by the local communities surround the reserves. The MedWetCoast project has initiated recently organic farming in the project's sites to demonstrate to the farmers the techniques and benefits of organic farming and how to prevent chemical insecticides and pesticides from impacting non target species through the use of biological safe alternatives.
- The Ministry of Agriculture has issued decrees on fishery stating that marine living resources shall be harvested in a sustainable manner.
- The Agrobiodiversity project has promoted the *in-situ* conservation of important wild relatives

and local varieties of agricultural species in three sites. The project executed activities that encourage biodiversity-based products in the project's sites; it has established two agro-food centers in the project's sites namely Ham and Nabha, it has established a fattening unit in Aarsal for Herders Cooperative, it has provided support for a fruit trees nursery operated by a local NGO "ARDA" in one project site "Aarsal", it has conducted training sessions on agro-food processing at ARDA premises for the cooperatives and women groupings in the Project Sites of Aarsal, Ham, Maaraboun and Nabha and has organized an international conference on "Promoting Community-Driven Conservation and Sustainable Use of Dryland Agro-biodiversity" at ICARDA (April 2005). Furthermore, the project has organized training on organic farming to the local farmers in the projects sites and has carried out a research study to assess the potential uses of wild fruit trees

- The Ministry of Environment has finalized in June 2005 the preparation of the national part of a PDF-B (Project Development Funds) project funded by GEF entitled "Design, Testing and Evaluating of Best Practices for *in situ* Conservation of Economically Important Wild Species". The project is regional and covers Lebanon, Egypt, Morocco and Turkey, the PDF-B phase supported the design and preparation of a proposal for the full GEF project that will "facilitate the *in-situ* conservation and management of economically important wild plant species" in the four mentioned countries. During this phase, the plant species and their locations and sites were identified by the four participating countries as important to agriculture or forestry or to have some other economic importance, (such as medicinal or aromatic species) in natural or semi-natural habitats and in traditional farming systems.

The regional proposal for the full project was finalized in September 2005 and will be submitted to the GEF soon for approval

-Since 1993 the Lebanese Agricultural Research Institute (LARI) has been carrying out research in relation to the Lebanese medicinal plants. This ongoing operation is of vital importance especially that Lebanon is rich in agrobiodiversity; the fact that might enhance the progress of medicine in the agricultural sector and would allow endangered species find a field of valorization in the food industry sector which will help in preserving them and ensuring a potential new income to the Lebanese industry. Ways should be found to cultivate these species and prove their status as being sustainable resources for the Lebanese economy in a way that would enhance women labor in poor rural areas thus would have a positive impact on rural development. However there are constraints encountered in this field related mainly to the limited cooperation with local and regional scientific institutions working on herbal, medicinal and aromatic plants.

To note that a conceptualization of a strategy of herbal, medicinal and aromatic plants from Lebanon has been elaborated in the Lebanese Agricultural Research Institute (LARI); a strategy that included components of valorizing medicinal and aromatic plants; defining their ecology, classification, cultures, research methodology, utilized techniques, phytochemistry, usage and medical industry based on plants; in addition this strategy has highlighted suggestions for the Lebanese norms, procedures for controlling medicinal and aromatic plants, procedures for improving their production and ensuring quality control, as well as aspects related to trade, economic goals and aspects related to the consumption of medicinal and aromatic plants. However this strategy is still not applied.

Furthermore, some activities in this regards are implemented

- A program focusing on organic farming is being implemented by the American University of Beirut: The "Healthy Basket (HB) program. It aims at promoting agriculture as a viable livelihood strategy through its support to organic farming. Healthy Basket demonstrates its commitment to decreasing environmental pollution and subsequent food contamination. Healthy Basket provides a wide variety of traditional and innovative fresh and processed organic products marketed through individual sales, as well as direct sales to hotels, restaurants, food distribution chains and health shops.
- The Healthy Basket (HB) program has played an instrumental role in overcoming the marketing limitations and disfunctionalities by providing innovative community based tools for the marketing the products of organic agriculture in Lebanon.

- A project entitled: "Bioprospection: An alternative for sustainable agricultural development" in Lebanon funded by MERCY Corps was launched in 2001 for a 5 years duration. The project was executed by the different faculties at the American University of Beirut in collaboration with Ohio State University (USA) and the University of Toledo (OH, USA). The project main aim was to rely on collaborative research, using biotechnology, to generate new plant-derived commercial products from indigenous Lebanese plants (biodiversity). The purpose is to diversify the agro-industrial portfolio in Lebanon, promote sustainable agro-industrial growth in rural communities, identify a short list of key plant species with potential medicinal, bioactive, and/or ornamental value, assess their potential markets and initiate their production.

For this purpose propagation and on farm trials have been initiated with the intent to domesticate those species that prove to be with market value and to avoid overexploitation of wild species with medicinal and ornamental potential.

- An ongoing research project at the American University of Beirut in collaboration with the University of Reading is addressing the economic valuation of forests in Lebanon.
- A local NGO, AFDC, is enhancing its activities to cover sustainable use through encouraging communities to control grazing and to deal with Beekeeping.
- A three year FAO funded study in currently in progress to assess the utilization of selected plant species as a source of natural products to control plant pests. This project is a collaboration between the American University of Beirut and the Ministry of Agriculture.
- The University of Balamand is conducting a project on "Assessment of Commercial Fish Species". The purpose of this project is to evaluate fish species landings by administering a survey to fishermen in the major fishing ports in North Lebanon. Species type, quantity, economic value and fishing effort are being calculated. The project is implemented in collaboration with the FAO.

Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- Diversification of agriculture sector with alternative native crops
- Domestication of edible fodder crops
- Income generation from sustainable use of agrobiodiversity resources
- Production of educational material and integration of conservation and sustainable use of biodiversity in school curricula
- Number of training centers and number of training workshops
- Research driven changes in agrobiodiversity practices
- Database available to IT and non IT accessible areas
- Number of local populations directly or indirectly involved/impacted in the protection and use of protected areas
- Number of sites hosting ecotourism activities
- Number of individuals involved in ecotourism
- Valuation/assessment of indigenous knowledge
- Number of tourists and size of activities
- Implemented ecotourism projects and number of eco-tour operators
- Increase number of native plants produced locally
- Increase number of native plant nurseries
- Increase number of native species used for reforestation and planting projects in public areas including public forests and gardens
- Research findings responding to stated priorities in the NBSAP
- New raw and processed products based on native species production and collection
- Number of sustainable practices in forest management that lead to small entrepreneurial activities
- Expansion of semi natural areas based on habitat regeneration
- Number of nurseries producing native trees and shrubs
- Number of projects implemented in relation to the use of endemic species in urban landscape
- Increase in green cover
- Production of educational material in school
- Realize an update distribution of fresh water species: common, rare, endemic and threatened

Please provide information on challenges in implementation of this target.

Main challenges are faced in agriculture sector where intensive farming is developing with lack of

enough incentives to ensure biologically friendly development of agriculture.

Better linkage with management of the species harvested and the management of production areas through an ecosystem based approach to management.

The concept of sustainable use was recently integrated in the nature reserves in which only strict conservation was applied; sustainable use needs to be further implemented and promoted in the nature reserves.

In the fishing sector, low awareness, lack of law enforcement and absence of transparent strategy are the main challenges.

Please provide any other relevant information.

Box IX.

Target 4.2		Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced	
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target		X	
c) Yes, one or more specific national targets have been established			
Please provide details below.			
The target 4.2 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:			
Objective 1: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:			
<ul style="list-style-type: none"> - Identification of the potentialities of the Lebanese natural habitats and terrestrial ecosystems - Providing qualified staff to carry out efficiently the identified measures, on condition that necessary funds are to be ensured properly 			
Objective 2: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:			
<ul style="list-style-type: none"> - Study the fishing sector scientifically (practices, needs, potential, and stocks) - Highlight the culture, traditional, and artistic significance of the sea by encouraging non-destructive traditional sports 			
Objective 3: Protect endemic species by utilizing them in urban landscape:			
<ul style="list-style-type: none"> - Expand public awareness and qualities of local biodiversity 			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal	X		The national actions set under objective 2 mentioned in the section above is related to marine ecosystems
d) Dry and subhumid land	X		The national actions set under objective 1 mentioned in the section above is related to terrestrial biodiversity which cover mountain, forest, dry and subhumid ecosystems
e) Forest	X		

f) Mountain	X		
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan		X	
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target 4.2 is incorporated into the NBSAP addendum 2005.			
IV) Please provide information on current status and trends in relation to this target.			
<p>Unsustainable cutting of forest resources occurs in private lands and is mainly due to illegal activities.</p> <p>Hunting has no strategic document setting main priorities and threat, thus there might be cases when due to lack of country guidelines unsustainable practices could take place.</p> <p>All activities having negative impacts and including unsustainable use and consumption of biodiversity are prohibited inside the nature reserves.</p> <p>Several awareness campaigns are conducted by the MoE, the different biodiversity related projects and NGOs all over the country with the aim of reducing unsustainable consumption and the negative impacts on biodiversity.</p> <p>In Lebanon, mitigation measures of impacts on biological diversity are addressed in various legislations or draft legislations and chapters as follows:</p> <p>Law for the Protection of Environment (law 444/02) has dedicated an entire chapter for the management of natural resources and conservation on biological diversity - specifically articles 47 to 49 which call for the protection and sustainable use of biodiversity, the establishment of nature reserves and for regulating access to genetic resources. Furthermore, the Law 444 stipulates that incentive measures be given to actions that avoid or minimize impact on environment including biodiversity however this is not implemented so far since the relevant implementation decree is not issued yet.</p> <p>Based on the law 444, draft EIA and SEA decrees were prepared by the Ministry of Environment and submitted to the Council of Ministers for endorsement.</p> <p>The draft EIA decree states that all major development, infrastructure and industrial projects will have to undergo an EIA study including effects on biodiversity, in order to promote conservation activities before receiving a approval.</p> <p>The draft SEA decree aims at mainstreaming environmental considerations into sectoral plans and programmes at a national level. Once issued, the implementation of the SEA decree would de facto lead to the minimization of adverse impacts of plans, programmes and policies on biodiversity.</p> <p>Although the EIA decree is not endorsed yet, almost 90 EIAs studies have been conducted over the past five years, mostly for wastewater treatments systems, soil waste, marinas, quarries, building centers, and hospital waste treatment. At the beginning, the sections related to biodiversity assessments were not including meaningful assessment of baseline biodiversity components and proposition of viable alternatives or mitigation measures. Accordingly, based on this identified need a manual and guidelines for the integration of biodiversity in SEA and EIA processes was developed by the MoE and finalized in October 2005.</p> <p>The draft law on "access and benefit sharing" was developed in the year 2005 and once issued will lead to the regulation of the access to the Lebanese biological and genetic resources and will</p>			

reduce unsustainable consumption.

Legislation issued by the Ministry of Agriculture aims as well at minimizing adverse impact on wild species and ecosystem and unsustainable consumption mainly the Forest code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) which stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in fact and bans and organizes human activities with adverse impacts on the forest species. On the other hand, Ministerial Decisions were issued by the Minister of Agriculture to regulate the use of target species: the export of all medicinal and aromatic plants, prohibiting the import and introduction of all cedar seeds and plants, prohibiting the picking and export of ferrula plant & roots and regulating the harvesting of oregano and salvia.

Other mitigation measures of impacts on biological diversity and initiatives to reduce unsustainable consumption are addressed in various activities and initiatives mainly within the frame of international biodiversity related projects operating in MoE, MoA and LARI such as the MedWetCoast, the Protected Areas and the Agrobiodiversity projects. Those activities include the promotion of in-situ conservation, sustainable use, ecotourism, Organic farming, biodiversity based products, income generating activities, raising public awareness and conducting training to the local communities etc .

V) Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- Percent area of each ecosystem type receiving a degree of protection
- Increased number of research proposals and activities submitted to national and international funding sources and related to NBSAP priorities
- Number of products based on native species, number of businesses offering native species, number of urban designs including the use of native species

VI) Please provide information on challenges in implementation of this target.

- Lack of law enforcement
- Lengthy process for the endorsement of the EIA and SEA draft decrees and draft law on "Access and Benefit Sharing" which were developed by MoE
- Needs for further public awareness
- Protection of biodiversity is mainly applied properly inside the nature reserves, there is a need to regulate the use of biodiversity outside the nature reserves in order to reduce unsustainable consumption and negative impacts on biodiversity

VII) Please provide any other relevant information.

Box X.

Target 4.3	No species of wild flora or fauna endangered by international trade		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
The target 4.3 is incorporated in the 2005 NBSAP addendum 2005, however it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP only one national action: Objective: Protect endemic species by utilizing them in urban landscape: - Apply strict regulations on imported germplasm (plants, animals, fish, birds)			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal			

d) Dry and subhumid land			
e) Forest			
f) Mountain			
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan		X	
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target 4.3 is incorporated into the NBSAP addendum 2005.			
Please provide information on current status and trends in relation to this target.			
<p>Lebanon has not taken major measures to regulate the international trade of endangered species and has not yet ratified the CITES. However, the MoE has developed a draft law on "Access and benefit sharing", the law will regulate the access to the Lebanese biological and genetic resources thus will reduce the international trade of endangered wild flora and fauna existing in Lebanon.</p> <p>Furthermore, legal measures were taken for the use and trade of some endangered species as follows:</p> <ul style="list-style-type: none"> - Forest code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in facto. - Ministerial Decision issued by the Minister of Agriculture regulating the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996) - Ministerial Decision issued by the Minister of Agriculture (Decision 108/1, dated 12/9/1995) prohibiting the import and introduction of all cedar seeds and plants - Ministerial Decision issued by the Minister of Agriculture prohibiting the picking and export of ferrula plant & roots (Decision 340/1 dated 1/8/1996) - Ministerial Decision issued by the Minister of Agriculture in 1998 regulating the harvesting of oregano and salvia (Decision 177/1) - Ministerial Decision issued by the Minister of Agriculture banning the fishing of whales, monk seals and marine turtles and the use of their parts for commercial purposes. 			
Please provide information on indicators used in relation to this target.			
Indicator set for the national action in relation to this target is the following:			
<ul style="list-style-type: none"> - Identification of most invasive species reference manual, information present on MOE clearing house mechanism, incidence of illegally introduced species 			
Please provide information on challenges in implementation of this target.			
<ul style="list-style-type: none"> - CITES convention is not yet ratified in Lebanon. - Applying strict regulations on exported germplasm (plants, animals, fish, birds) is not considered. - Trainings for border guards and custom officers about restricted species have been not taking place. - The draft law on "Access and Benefit Sharing" is not issued yet and its endorsement by the Parliament requires a long process. - Lack of proper law enforcement - Needs for specific rules and regulations for various endangered species 			
Please provide any other relevant information.			

Box XI.

Goal 5	Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.		
Target 5.1	Rate of loss and degradation of natural habitats decreased		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
<p>The target 5.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:</p> <ul style="list-style-type: none"> - Establish core and buffer zones with access to fire fighters and restricted vehicles <p>Objective 2: To save, use and study biodiversity in fresh water ecosystem:</p> <ul style="list-style-type: none"> - Establish a water quality control system and implement safe water programmes - Expand fresh water fish farms to reduce pressure on natural habitats <p>Objective 3: Provide stability for the ecosystems to permit the establishment of ecological equilibrium</p> <ul style="list-style-type: none"> - Prevent and combat forest fires - Solving the problem of overgrazing: identification and promotion of adequate fodder plants and pasture areas <p>Objective 4: Manage forests and ranges for productivity and sustainability</p> <ul style="list-style-type: none"> - Follow-up and monitor (1) to make sure that the suggested actions are correctly undertaken, (2) to correct any occasional mismanagement, and (3) to be able to supply quick remedy for any natural hazard outburst <p>Objective 5: Protect coastal and marine ecosystems and biodiversity:</p> <ul style="list-style-type: none"> - Limit further industrial development on the coast - Conduct a comprehensive survey to assess the situation of the coastal zone and review land use map and legislation 			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water	X		The national actions set under objective 2 mentioned in the section above are related to fresh water ecosystems
c) Marine and coastal	X		The national actions set under objective 5 mentioned in the section above are related to marine and coastal ecosystems
d) Dry and subhumid land			
e) Forest	X		The national actions set under objective 3 and 4 mentioned in the section above are related to forests ecosystems
f) Mountain	X		The national actions set under objective 3 and 4 mentioned in the section above and related to forests ecosystems cover as well mountain ecosystems
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			X
Please provide details below.			
The target 5.1 is incorporated into the NBSAP addendum 2005.			
This target is also covered by the national action plans related to the conservation of marine and			

coastal biodiversity developed by the Lebanese Ministry of Environment in 2002 within the context of the Strategic Action Plan for the conservation of the coastal and marine biodiversity in the Mediterranean (SAP_BIO project). Lebanon has developed five national action plans for the SAP_BIO project, the protection of natural habitats was covered by the following action plans:

Action Plan 1: "Establish Conservation Strategies for Coastal Habitats":

Six main objectives were identified under this priority action as the principle aims for ensuring the successful establishment of conservation strategies for coastal habitats, four of which are related to the target 5.1:

1. Generate GIS maps to locate and characterize hotspots and infer current and future impacts on affected habitats.
2. Develop coastal land use zoning. This target will substantially reduce the impact of human activities on biodiversity by regulating the chaotic development on the Lebanese coast.
3. Develop conservation priorities including the identification of habitats that should be protected. This target requires the efforts of the scientific community in collaboration with public institutions and concerned stakeholders. Furthermore, the involvement of the local community is essential for the identification and sustainable protection of sensitive habitats.
4. Develop conservation strategies including the sustainable use of habitats that require protection. By accomplishing the above-mentioned tasks, conservation strategies can therefore be developed to ensure sustainable use of the protected habitats.

Five activities were identified in the above mentioned action plan to meet the six identified objectives, three of them are related to target 5.1 as follows:

- Protection of terraces
- Protection of remaining sand beaches and dunes
- Protection of river mouth habitats

Action Plan 2: "Develop necessary legislation for the conservation of marine and coastal biodiversity"

Objective: Develop a framework law for the coastal areas management

Actions:

- Develop and implement legal remedial measures for the rehabilitation of degraded marine habitats
- Develop legislation to define the public marine area with determination of authorised area for the establishment of tourist resorts
- Review and update existing national legislation related to the coastal areas management and use
- To issue and implement appropriate legislation related to impact assessment for all infrastructure, development and construction projects
- Classify the remaining agriculture coastal lands as specially important areas at national level
- Review and update national legislation related to the conservation of river mouth habitats
- Provide necessary capacity building and necessary equipments for the local authorities to protect important natural sites.

As part of the protected areas strategy, national targets for conservation and sustainable use of Biodiversity have been established since 2000. Targets of relevance under this global target are:

- The cultural landscape shall be managed in such way that biological diversity, the historical value of the landscape are maintained,
- All management or other activities, actions or decisions should result in 'No Net Detriment' or deterioration to the environmental values or condition of the protected areas.

This global target is partly incorporated into the agricultural development strategy of the Ministry of Agriculture (2005-2009), especially in relation to the wise use of water; and in the National Action Plan to combat desertification: "Promote and enforce the protection and sustainable management of forests".

Please provide information on current status and trends in relation to this target.

In the absence of a National Forest Programme a National Action Programme to Combat

desertification was prepared by the MOA with the assistance of the GTZ, UNDP/DDC in order to fulfill the requirements of the UNCCD. During the NAP preparation process, priority actions were defined based on participatory consultations between the various stakeholders, and causes and effects of land degradation were discussed and proper mitigation measures were formulated.

In order to face the challenge of loss of green cover by increasing the forest area to 20% of the country's total surface area, the Government of Lebanon has allocated in 2001 a budget of 17 million USD to the Ministry of Environment for an initial period of five years. Accordingly, The MOE has prepared a reforestation/afforestation plan for 18,000 hectares of abandoned land in all the Lebanese regions. Other plans will be later developed to cover a total area of 200,000 hectares to be planted in 30-40 years. However, The plan defines the criteria of seed provenances, seedlings production, site selection, site preparation, forest roads construction, plantation (seeds and seedlings), planted sites protection (from grazing and from forest fires) and maintenance. The plan defines also the institutional and legislative mechanisms required for an efficient execution of the proposed activities.

In addition, several NGOs are also involved at different levels in various reforestation programmes: "The Friends of the Cedar of God", "Greenline" and "AFDC".

The risk of occurrence of forest fires was very high during the charcoal production operations. A recent decree has totally forbidden the production of charcoal. However permits can be delivered by the RDNRD for the pruning and cleaning of dense maquis and wooded lands. This reduces the risks of forest fires and provides fuel wood to the local populations.

In addition to the reforestation activities, AFDC organizes and implements yearly different capacity building activities (workshops, seminars, training courses, etc) targeting the local community at large at the Mediterranean Forest Development and Conservation Center of Lebanon (MFDCL). The capacity building activities deal with the issues of Forest fire fighting and prevention.

As a contribution to face the marine habitat degradation issues, the MNCSR is currently in process of setting priority activities aiming at mitigating the deterioration of the marine bottom and the landscape through their protection from solid waste and chemicals. For this purpose, the MNCSR is currently conducting research to gather data about the national marine status, including biotic and abiotic components which will be used as awareness material and a benchmark for the future monitoring actions.

Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- Number of fire fighting infrastructure in the protected areas
- Number of people working in forest fighting
- Number of people with management plans
- Assessment of water quality in all rivers every 2 years
- Frequency of fires
- Intensity of fires
- GIS based information on forests fires
- Status (Evolution/regeneration) of forests (forest modeling)
- Size of flocks
- Public investment in forest fire [Human resources] and budgeting (number of individuals)]
- Meteorological data
- Number of fodder species identified
- Imported amount of dairy products
- Number of fire incidents, wood cutting or hunting events prevented by local communities
- Number of compliance to existing laws and regulations in relation to industrial development in the coast

Please provide information on challenges in implementation of this target.

The challenges identified in the SAP-BIO project for the action plan in relation to this target are the following:

- Lack of detailed topographic and bathymetrical maps for the Lebanese coast
- Complete absence of a national land use plan
- Non-availability of up to date field and laboratory research equipment
- Difficulty in obtaining funding for marine research
- Lack of awareness on the level of concerned public institutions (ministries)
- Lack of support by the political body to protect the coastal zone
- Lengthy process for the issuance of new legislation

Lebanon has adopted the Criteria & Indicators for sustainable forest management and is currently working on their application. However, this would be a sterile initiative in the absence of a National Forest Programme. Instead, the National Action Programme to Combat desertification was prepared with the assistance of GTZ, UNDP and a contribution from the MOA. The NAP has briefly tackled the issues of the constraints facing the forestry sector. They were identified as follows:

- Inadequate legislation governing the management of the forest
- Inadequate forestry policy.
- Lack of human, technical and financial resources needed for a proper protection and management of forests.
- Frequent incidence of forest fires.
- Over-grazing.
- Inadequate skills for the protection of forests against pests and diseases
- Limited public awareness.
- Rapid and unplanned urbanization.
- Clearance of forests for agricultural purposes.

As per the Ministry of Agriculture, the National Action Plan to combat forest fire has been not fully prepared yet.

The challenges facing the Protected areas project at the Ministry of Environment include: better knowledge on important habitats and areas, Communication with planning authorities (mainly municipalities) and sectoral authorities, Improved legislation, Monitoring, MoE staff managing PAs is minimal and cannot cope with the current load.

Please provide any other relevant information.

Box XII.

Goal 6	Control threats from invasive alien species.
Target 6.1	Pathways for major potential alien invasive species controlled
I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	
Please provide details below.	
<p>The alignment done between the 1998 Lebanese NBSAP goals and targets with the 2010 global biodiversity targets shows that the target 6.1 was not covered by any national target set in the NBSAP.</p> <p>However this target was incorporated in the national action plans developed by the Ministry of Environment in 2002 within the context of the SAP_BIO project mainly by three action plans as follows:</p> <p>Action Plan 1: Establish Conservation Strategies for Coastal Habitats: Objective: Develop management strategies for the control of exotic invasive species. Monitoring population dynamics of exotic invasive species and their effects on local marine fauna and flora will allow for better innovation of management strategies. Activity: Assessing the impact of invasive species on coastal habitats</p> <p>Action Plan 2: Establish a Monitoring strategy for the marine and coastal biodiversity: Action 1: Monitoring of the marine populations dynamics through underwater visual census UVC technique Action 2: Monitoring of the marine biodiversity by using the bio -indicators method</p>	

Action Plan 3: Develop necessary legislation for the conservation of marine and coastal biodiversity
 Objective: Develop national legislation to avoid the loss and negative impact to marine fauna and flora and ensure their conservation
 Action: Review, develop and /or and update national legislation related to invasive species.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal	X		The national objectives and actions mentioned in the section above are related to marine and coastal ecosystems
d) Dry and subhumid land			
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

The target 6.1 is covered by the national action plans related to the conservation of marine and coastal biodiversity developed by the Lebanese Ministry of Environment in 2002 within the SAP-BIO project (Refer to question 1).

IV) Please provide information on current status and trends in relation to this target.

The National Marine Center in Lebanon is associated with CIESM Atlas of exotic species which provides a comprehensive survey on recent marine "immigrants" in the Mediterranean. CIESM covers various aspects of the marine science such as geo-physical, chemical and biological processes around six committees including living resources and marine ecosystem and coastal ecology. However, researchers at the National marine centre have recorded several alien algal, planktonic and pelagic species.

Joint research projects on marine benthic fauna and flora and fish between the Lebanese University and the National Council for Scientific Research provided interesting data about the invasion of the Lebanese sea with lessepien species originated from indopacific or coming from the Red Sea through Suez Canal and are not part of the Mediterranean fauna. However there are no actions taken or even planned to control this major pathway (Canal Suez) which represents an issue beyond the national level.

Current research conducted by the Lebanese University and the National Council for Scientific Research on algae and macro invertebrates in freshwater systems confirmed the presence of alien species that are imported with the feet of migrating waterfowls and waders.

However, identified pathways of national scale are: import of timber, non-sterilized equipment for fishing, boats, import of adult trees for horticulture. Status of pathways of alien species is that these exists to some extent, but are increasing because of increased international trade and travel activities.

V) Please provide information on indicators used in relation to this target.

No national indicators have been developed. At the individual level of researchers two indicators are used:

1-Number of outbreaks of new pests.

2- limits of the areas in which alien species are found.

VI) Please provide information on challenges in implementation of this target.

Challenges identified in the action plan related to the “the Establishment of Conservation Strategies for Coastal Habitats” within the SAP_BIO project in relation to this target are the following:

- Difficulty in securing specialists in marine sciences, more specifically taxonomists
- Difficulty in obtaining the necessary database for marine and coastal fauna and flora (not available)
- Difficulty in obtaining recent background data on invasive species and their impact (not available)
- Lack of detailed topographic and bathymetrical maps for the Lebanese coast
- Non-availability of a research vessel for long term studies
- Non-availability of up to date field and laboratory research equipment
- Difficulty in obtaining funding for marine research
- Absence of financial support for academic research institutions in terms of marine research
- Lack of awareness on the level of concerned public institutions (ministries)
- Lack of support by the political body to protect the coastal zone
- Lengthy process for the issuance of new legislation

Challenges of controlling invasive species in terrestrial ecosystems:

All the invasive species do not have national strategies or plans for minimizing distribution of these species. Whereas the main trans-regional distribution pathways are not controlled to prevent invasion of new species, distribution of invasive species within the country is not enough controlled.

VII) Please provide any other relevant information.

The issue of alien species has not yet been considered as a priority area deserving immediate attention. As a result, there is no financial support devoted for this issue which in turn translates to very superficially and scattered measures taken to identify the status of alien invasive species in Lebanon. Another factor hindering progress in this area, relates to the lack of taxonomic experts in various fields.

Box XIII.

Target 6.2	Management plans in place for major alien species that threaten ecosystems, habitats or species	
National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
<p>The target 6.2 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP only one action related to the fresh water biodiversity:</p> <p>Objective: To save, use and study biodiversity in fresh water ecosystem:</p> <ul style="list-style-type: none"> - Exercise very close and strict conditions on introducing new species <p>This target was incorporated in the national action plans developed by the Ministry of Environment in 2002 within the context of the SAP_BIO project mainly by three action plans as follows:</p> <p>Action Plan 1: “Establish Conservation Strategies for Coastal Habitats”:</p> <p>Objective: Develop management strategies for the control of exotic invasive species. Monitoring population dynamics of exotic invasive species and their effects on local marine fauna and flora will allow for better innovation of management strategies.</p> <p>Activity: Assessing the impact of invasive species on coastal habitats</p> <p>Action Plan 2: “Establish a Monitoring strategy for the marine and coastal biodiversity”:</p> <p>Objective: Monitoring of the marine populations dynamics through underwater visual census UVC technique</p> <p>Action Plan 3: “Develop necessary legislation for the conservation of marine and coastal biodiversity”</p>		

Objective: Develop national legislation to avoid the loss and negative impact to marine fauna and flora and ensure their conservation.

Action: Review, develop and /or and update national legislation related to invasive species.

National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water	X		The national action set in the NBSAP mentioned in the section above is related to fresh water ecosystem
c) Marine and coastal	X		The national objectives and actions set within the SAP_BIO action plans mentioned in the section above are related to marine and coastal ecosystem
d) Dry and subhumid land			
e) Forest			
f) Mountain			

Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No

b) Yes, into national biodiversity strategy and action plan

c) Yes, into sectoral strategies, plans and programmes

X

X

Please provide details below.

The target 6.2 is incorporated in the 2005 NBSAP addendum 2005.

The target is incorporated in the national action plans developed by the Ministry of Environment in 2002 within the context of the SAP_BIO project.

Please provide information on current status and trends in relation to this target.

National actions in relation to target 6.2 are not initiated yet; however measures to prevent the introduction of alien species were taken in the protected areas and are covered by the national legislation related to the establishment of each existing nature reserve and by their management plan.

A management plan that was developed in 2003 to restore the birds of Beirut Central District (BCD) and promotes the use of native or indigenous plant species in parks, streets and bird corridors is under implementation by the real estate company in charge for the rehabilitation of the city.

Please provide information on indicators used in relation to this target.

No indicators related to management plans for invasive species have been set.

Please provide information on challenges in implementation of this target.

Challenges identified in the action plan related to the "the Establishment of Conservation Strategies for Coastal Habitats" within the SAP_BIO project in relation to this target are the following:

- Difficulty in securing specialists in marine sciences, more specifically taxonomists
- Difficulty in obtaining the necessary database for marine and coastal fauna and flora (not available)
- Difficulty in obtaining recent background data on invasive species and their impact (not available)
- Lack of detailed topographic and bathymetrical maps for the Lebanese coast
- Non-availability of a research vessel for long term studies
- Non-availability of up to date field and laboratory research equipment
- Difficulty in obtaining funding for marine research
- Absence of financial support for academic research institutions in terms of marine research
- Lack of awareness on the level of concerned public institutions (ministries)
- Lack of support by the political body to protect the coastal zone
- Lengthy process for the issuance of new legislation

It is a challenge to discover a new alien species on time before it colonizes an area. Other challenges include: lack of inter sectoral coordination, appropriate legislation and political willingness.

Please provide any other relevant information.

A national action plan for invasive alien species needs to be developed.

Box XIV.

Goal 7	Address challenges to biodiversity from climate change, and pollution.		
Target 7.1	Maintain and enhance resilience of the components of biodiversity to adapt to climate change		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
<p>The target 7.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP only the following national action :</p> <p>Objective: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <p style="padding-left: 40px;">- Establish an environmental research station to study the ecological changes over time</p>			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action mentioned in the section above is related to the agriculture biodiversity
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
<p>The target 7.1 is incorporated into the NBSAP addendum 2005.</p> <p>Studies, monitoring and research are expected to create preconditions for the development and implementation of adaptation measures, since by the observation of natural processes and accumulating information as well as by studying individual indicator species or ecosystems it is possible to justify the need of different environment protection measures and even change sectoral development policies, develop corresponding legal acts and economic activities. Within this framework, the global as well as the national targets are incorporated within the study of climate change prepared by MOE-UNDP. In this study, expected impacts of climate change, vulnerability and adaptation measures were explored for 1) bioclimatic zones, 2) water resources, 3) agriculture, 4) terrestrial ecosystems, 5) coastal system, 6) marine ecosystem, and 7) socio-economic aspects.</p>			
Please provide information on current status and trends in relation to this target.			
<p>In the study of "Impact on natural areas and wildlife in Lebanon" which represents a part of a general study conducted to assess the vulnerability of various Lebanese sectors to the projected global climate changes and the adaptations to the impacts, the following adaptations that may reduce the climate change impact were identified:</p> <p>1. Natural adaptation where the vegetation and wildlife may acclimatize where the climate change may still be within their tolerance range. Some may adapt (in the evolutionary sense) if containing enough genetic diversity. T</p>			

2. Natural adaptation may have to be assisted by exploring and cultivating certain drought-tolerant ecotypes. It may be also be enhanced by reducing habitat fragmentation and thus allowing the natural genetic variation to lead to suitable adaptations.
3. Habitat fragmentation can be reduced by establishing corridors and connections between the isolated habitat types.
4. Intensive studies on species and ecosystems have to be devoted to assess the degree of vulnerability and to discern the above aspects.
5. Water use and change in land use have to be rationalized to protect wetlands and riparian habitats.
6. The area and the number of protected areas need to be expanded to include more of the sensitive habitat types and/or more vegetation and bioclimatic zones.
7. Buffer zones need to be established around protected areas to reduce the human impacts and those of climate change.
8. Adaptation measures have to be adopted within the next two decades.
9. Because of the international importance of some protected area it may be possible to seek international assistance especially in schemes such as "debt swapping" which involves trading foreign debts for financing the establishment and maintenance of protected areas and nature reserves.

Please provide information on indicators used in relation to this target.

The indicators set for the national action in relation to this target mentioned above is the following:

- Indicators and monitoring strategy.

Please provide information on challenges in implementation of this target.

According to the study that was prepared by MOE-UNDP mentioned above, challenges relate to the inherent weakness or lack of many and varied components that can be grouped as follows:

Concerning management, there is a general lack of well defined sectoral strategies and policies, as well as a very weak integration and coordination between different government agencies, plus the fact that implementing legislation needs a great push. When it comes to environmental stresses, and what has recently become popular, i.e. using the terms "Hot Spot" and "Sensitive Area", it is observed that under several circumstances there is no distinct differentiation between approaches separating causes of environmental deterioration from processes taking place that further this deterioration, and from results themselves. This is why approaches followed are often partial solutions and, hence, deliverables are short-term only.

The technical aspects are pretty straight forward. There is a notable lack of expertise and skilled manpower, monitoring plans are almost non-existent, standards are not yet ratified and updated-upgraded equipment is lacking.

Finally, in general existing databases are, to begin with, chaotic, dispersed, inaccurate, sometimes old and, therefore, can not be used as a reliable source of specific information. If and when good information is there, government agencies may not make them available and even difficult to exchange. The data/information are not mostly standardized posing, therefore, a problem of making good use of them.

Obviously, all the above constraints must be removed. This is necessary in order to be able to achieve good results of problem analysis. It is of utmost importance to do studies, investigate and evaluate the proper requirements to face a national and international problem as serious as climate change. Lebanon must play a role and contribute to human sustainability.

Please provide any other relevant information.

Box XV.

Target 7.2	Reduce pollution and its impacts on biodiversity		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
<p>The target 7.2 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: To save, use and study biodiversity in fresh water ecosystem:</p> <ul style="list-style-type: none"> - Water sources polluters should be asked to reduce pollutants, pay to rehabilitate or encouraged to alleviate pollution pressure <p>Objective 2: Protect coastal and marine ecosystems and biodiversity:</p> <ul style="list-style-type: none"> - Identify hot spots and land based sources of pollution in addition to human caused maritime sources of pollution such as petroleum - Conduct EIA surveys prior to construction of treatment plants - Establish contingency plans to combat pollution or mitigate their harmful effects - Develop an environmental monitoring program for pollutants and other bio-indicators <p>Objective 3: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:</p> <ul style="list-style-type: none"> - Reduce excessive use of agrochemicals applications on IPM, multiple cropping, extension programs 			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action set under objective 3 mentioned in the section above is related to agrobiodiversity
b) Inland water	X		The national action set under objective 1 mentioned in the section above is related to fresh water ecosystems
c) Marine and coastal	X		The national actions set under objective 2 mentioned in the section above are related to marine ecosystems
d) Dry and subhumid land			
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?		
a) No		
b) Yes, into national biodiversity strategy and action plan		X
c) Yes, into sectoral strategies, plans and programmes		X
Please provide details below.		
<p>The target 7.2 is incorporated into the NBSAP addendum 2005.</p> <p>Furthermore, this target is incorporated in the national action plans developed by the Ministry of Environment in 2002 within the context of the SAP_BIO project mainly by three action plans as follows:</p> <p>Action Plan 1: Establish Conservation Strategies for Coastal Habitats:</p> <p>Six main objectives were identified under this priority action as the principle aims for ensuring the successful establishment of conservation strategies for coastal habitats, five of them are related to</p>		

this target as follows:

1. Generate GIS maps to locate and characterize hotspots and infer current and future impacts on affected habitats.
2. Identify actions needed to prevent pollution. By identifying the sources of pollution and their dispersal in the marine environment, prevention schemes and actions can be developed in order to greatly reduce polluting activities.
3. Develop coastal land use zoning. This target will substantially reduce the impact of human activities on biodiversity by regulating the chaotic development on the Lebanese coast.
4. Develop conservation priorities including the identification of habitats that should be protected. This target requires the efforts of the scientific community in collaboration with public institutions and concerned stakeholders. Furthermore, the involvement of the local community is essential for the identification and sustainable protection of sensitive habitats.
5. Develop conservation strategies including the sustainable use of habitats that require protection. By accomplishing the above-mentioned tasks, conservation strategies can therefore be developed to ensure sustainable use of the protected habitats.

The action set to meet the above mentioned objectives and which is directly related to the target 7.2 is the following:

- Protection of river mouth habitats:

This activity will mostly involve perennial river-mouths that are rich in biodiversity. It covers the preparation of a detailed description of the physical and biological parameters of target river-mouths in order to develop appropriate proposals for the protection of important freshwater outlets into the sea. It may also be associated with the development of watershed management plans in order to prevent pollution of river water and riverbeds as well as prevent all the river water to be used for agriculture and human consumption.

Action Plan 2: Establish a Monitoring strategy for the marine and coastal biodiversity:

Activity: Regular monitoring of the marine biodiversity by using the bio-indicators method

Action Plan 3: Develop necessary legislation for the conservation of marine and coastal biodiversity

Objective: Develop national legislation to avoid the loss and negative impact to marine fauna and flora and ensure their conservation

Activity: Develop practical action plans and secure necessary funds to improve the enforcement of national legislation aiming at prevention of pollution

IV) Please provide information on current status and trends in relation to this target.

Pollution of water resources is a major problem, as is urban pollution, mostly from unleaded gas and low-quality diesel. It is the preoccupation of every agency or individual and is a constraint in every single project.

Wastewater treatment is still minimal. However, USAID carried out in close coordination with the Ministries of Environment, Water and Energy, Agriculture and Interior, as well as with local municipalities many activities in this regard and completed several innovative and efficient waste management projects in rural clusters.

Considerable quantity of municipal and industrial waste is still dumped directly into Lebanon's landfills, rivers or into the sea. Some of the landfills are successfully rehabilitated, whereas in the rivers two projects are currently implemented in the Litani River alone 1) "An ecosystem approach to the sustainable management of the Litani watershed", which is a NCSR joint project with Litani River Authority, Development Studies Association, and Canadian Environmental Assistance with IDRC; and the "Litani Water Quality Management (LWQM)" project, which is currently implemented by the Development Alternatives Inc. (DAI) under USAID's environmental portfolio to treat long term water quality monitoring, integrated agricultural extension program, as well as solid waste and industrial waste management program. As for what it relates to sea, the Marine Center of Batroun is

implementing a joint CEDRE project between Lebanon and France on marine pollution and alteration of the Lebanese littoral: evaluation of risks and protection.

Lebanon has formed a national committee, composed of members from the various ministries such as defense, environment, transport, interior and civil defense, to combat oil spill pollution in the Mediterranean Sea. Lebanon and Syria have collaborated in combating oil spills by exchanging information and training.

Furthermore, Lebanon has signed all Mediterranean protocols; therefore all provisions are there to deal with issues outside national jurisdictions.

Vehicular air pollution is a growing problem, compounded by traffic congestion on the overburdened highway infrastructure. In addition, point source industrial pollution is a concern, particularly from the cement industry, but also from paper, pharmaceutical, paint and plastic producers as well as thermal power plants and refineries.

V) Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- Policy and draft law produced (in relation to protection of water sources pollution)
- Production of a map and publication of pollution level in the marine environment on seasonal basis
- Number of EIA performed
- Number of treatment plants stopped because of environment impact
- Create database of indicators, update routinely
- Decrease in utilization of harmful pesticides
- Reduction in the import of pesticides

VI) Please provide information on challenges in implementation of this target.

Challenges defined in the national action plans related to the SAP_BIO project and which are related to this target are the following:

- Difficulty in obtaining the necessary database for marine and coastal fauna and flora (not available)
- Non-availability of a research vessel for long term studies
- Non-availability of up to date field and laboratory research equipment
- Lack of awareness on the level of concerned public institutions (ministries)
- Lack of support by the political body to protect the coastal zone
- Difficulty of law enforcement agencies to prevent pollution along the coast
- Refusal of law enforcement agencies in prioritizing conservation measures (basically law enforcement) to polluting and construction activities

The existing laws are in need of urgent updating and should include best-practice guidelines and codes of practice for potentially polluting activities. Enforcement of these laws is still a problem and there is a need for the creation of a new environmental enforcement agency. Proposing regulatory controls and fines should take into consideration the economic strains on environmental polluters and must be designed to provide incentives for pollution prevention and control.

However, Lebanon has not established a mechanism for emergency response nor any contingency plans.

VII) Please provide any other relevant information.

There is a need to promote the adoption of a national strategy to phase-out the discharge of litter and toxic compounds in the Mediterranean Sea Area, giving priority to those substances contained in the black and gray lists of the protocol for the *Protection of the Mediterranean Sea Against Pollution from Land-Based Sources*. Highlight the importance of this action for Lebanon as a whole and for the marine nature reserves in particular.

Box XVI.

Goal 8	Maintain capacity of ecosystems to deliver goods and services and support livelihoods.		
Target 8.1	Capacity of ecosystems to deliver goods and services maintained		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			X
c) Yes, one or more specific national targets have been established			
Please provide details below.			
<p>The target 8.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: To save, use and study biodiversity in fresh water ecosystem:</p> <ul style="list-style-type: none"> - Well-drilling should be managed to conform to aquifer capacity - Forest control programmes should expand to cover river basin habitats - Strengthen plant aquaculture to produce protein and organic matter efficiently <p>Objective 2: Protect coastal and marine ecosystems and biodiversity:</p> <ul style="list-style-type: none"> - Organize a network of observation stations center around the national center for marine sciences or the NCSR and assist in the rehabilitation of research centers in general <p>Objective 3: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:</p> <ul style="list-style-type: none"> - Enhance the economic impact of monitoring programs such as coastal quality monitoring for bacterial indicators, in order to enhance the market value of the local beaches and produce - Develop training programs and awareness campaigns - Compile an updated national database of local biotopes, flora and fauna. Specify species that are underutilized or with potential for economic impact - Highlight the unique nature of terraces and the coastal historical settlement sites (ex sites used for the manufacture of stone tools in Rauche) - Study the potential of marine fresh water sources - Develop new sectors such as mariculture in order to improve employment condition of marine operators including fishermen (cooperatives) <p>Objective 4: Manage forests and ranges for productivity and sustainability:</p> <ul style="list-style-type: none"> - Establish a forest management plan - Regulate ecotourism - Spatial and temporal organization, in other terms planification, of all actions considering each and every previously identified forest product or service <p>Objective 5: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <ul style="list-style-type: none"> - Develop guidelines and standards for designing and implementing an agro biodiversity monitoring network on arable land. 			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action set under objective 5 mentioned in the section above is related to agrobiodiversity
b) Inland water	X		The national action set under objective 1 mentioned in the section above is related to fresh water ecosystems
c) Marine and coastal	X		The national actions set under objective 2 and 3 mentioned in the section above are related to marine and coastal ecosystems
d) Dry and subhumid land			
e) Forest	X		The national actions set under objective 4 mentioned in the section above are related to forest ecosystems

f) Mountain	X		The national actions related to forest ecosystem set under objective 4 mentioned in the section above covers also mountain ecosystems
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan		X	
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target 8.1 is incorporated in the 2005 NBSAP addendum 2005.			
Please provide information on current status and trends in relation to this target.			
<p>Under objective 4 above, ecotourism and rural tourism have developed quickly in recent years in Lebanon. They support local economy and create at the same time a risk of overexploitation of ecosystem resources. Hence the need for sustainable ecotourism.</p> <p>In many places ecosystem resources have been already overexploited, in spite of regulations and legislative basis. Insufficient control both from government and municipal institutions and low awareness of municipalities on the conservation of the biodiversity are cause of this situation.</p> <p>Forest resources are maintained on satisfactory level through the collaboration between the Ministry of Environment and the Ministry of Agriculture but the situation is difficult with poaching where in many cases sustainable practices are neglected.</p> <p>Capacity of agricultural lands to deliver goods and services on sustainable basis is enhanced by introduced agri-environmental measures.</p> <p>In general, all measures taken to ensure sustainable farming, fishery and forestry, as well as water use promote the maintenance of capacity of ecosystems to deliver goods and services</p>			
Please provide information on indicators used in relation to this target.			
Indicators set for the various national actions in relation to this target are the following:			
<ul style="list-style-type: none"> - Number of areas covering river basin identified - Number of employees/volunteers in forest and range land management - Improved livelihoods for local community from ecotourism - Sustained forest sites - Reduced illegal activities and violation in forests - Number of tourists (national and international) visiting the area - Drafted and Adopted plans for forests products or services - Framework related to agro biodiversity monitoring network developed – knowledge management (IT) established on MOE website and distributed as regular flyers 			
Please provide information on challenges in implementation of this target.			
The main challenges are the following:			
<ul style="list-style-type: none"> - Outside the nature reserves and some specific important sites, the concept of sustainable use and wise use of natural ecosystems and resources is not applied properly - Illegal activities and violations are recorded - Lack of proper law enforcement - Insufficient education and public awareness to prevent overexploitation of ecosystem capacity constitute a challenge - Information on conservation status and management of several ecosystems is lacking or of low level. 			
Please provide any other relevant information.			

Box XVII.

Target 8.2	Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained		
National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			X
Please provide details below.			
<p>The target 8.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: Protect coastal and marine ecosystems and biodiversity:</p> <ul style="list-style-type: none"> - Create partnerships with local population particularly fishermen and municipalities - Put in place a coordinating mechanism for stakeholders <p>Objective 2: Protect endemic species by utilizing them in urban landscape:</p> <ul style="list-style-type: none"> - Help in establishing zoos and aquaria for native species - Establish botanical gardens in cities, public or recreation parks... <p>Objective 3: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:</p> <ul style="list-style-type: none"> - Set up recreational areas, tourist centers, and open air theaters to attract visitors for enjoyment, education, participation and economic involvement - Set up wherever possible zoos, aquaria, and aviaries for educational and tourist purposes <p>Objective 4: Protect agricultural ecosystems and maintain native biological diversity:</p> <ul style="list-style-type: none"> - Establish a service to facilitate the exchange of material between farms and disseminate local or regional collection to appropriate sites <p>Objective 5: To protect agricultural ecosystems and associated biodiversity:</p> <ul style="list-style-type: none"> - Establish at least one botanic garden for ex-situ conservation of perennial crops including cultivated trees, annuals and biennials 			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national actions set under objectives 4 and 5 mentioned in the section above are related to agrobiodiversity
b) Inland water	X		The national actions set under objective 3 mentioned in the section above covers fresh water ecosystems
c) Marine and coastal	X		The national actions set under objective 1 mentioned in the section above are related to marine and coastal ecosystems. The national actions set under objective 3 mentioned in the section above covers marine and coastal ecosystems.
d) Dry and subhumid land			The national actions set under objective 3 mentioned in the section above covers terrestrial ecosystems which include forest, mountain, dry and sub-humid ecosystems
e) Forest			
f) Mountain			
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			

b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	
Please provide details below.	
The target 8.2 is incorporated in the 2005 NBSAP addendum 2005.	
Please provide information on current status and trends in relation to this target.	
<p>Agriculture Community based cultivation of fruit trees and medicinal plants through Ministry of Agriculture and support from USAID Programmes. Organic farming practices through support from MedWetCoast project, Agrobiodiversity project and USAID programme, and the collaboration of NGOs.</p> <p>Inland water Several programmes and projects are on-going addressing at the issues of livelihoods support, access rights and sustainable resource utilization (Protected Areas and MedWetCoast project; and USAID/ YMCA Programmes)</p> <p>Marine and coastal Strengthening local Communities through Livelihood Security has been part of the activities implemented in Tyre Coast Nature Reserve and Palm Islands marine Nature Reserve, mainly through the protection of fish spawning grounds and the development of the eco-tourism sector which provides locals with new job opportunities.</p> <p>Dry and sub-humid Agrobiodiversity project has components that address issues like livelihoods support, access rights, and sustainable resource utilization in dry and sub-humid lands.</p> <p>Forest and Mountain Ministry of Agriculture is giving permits for supporting local livelihoods such as harvesting some culinary plants and clearing dense maquis to benefit locals from wood for charcoal production and to combat fire at the same time. The reforestation efforts by the Ministry of Agriculture with carob and pine tree are to allow the local communities harvest them for marketable resources.</p>	
Please provide information on indicators used in relation to this target.	
<p>Indicators set for the various national actions in relation to this target are the following:</p> <ul style="list-style-type: none"> - Number of businesses – number of employee per business – number of visitors - Successful reintroduction of species in natural environment - Number of constructions and development projects that rely on native species for the development of outdoor spaces - Number of business based on ecotourism - Number of businesses benefiting from the presence of protected area - Number of people benefiting, number of zoos - Areas under cultivation with native species increased – quality of traditional varieties enhanced - Market of local varieties increased - Increasing number of species conserved in field banks 	
Please provide information on challenges in implementation of this target.	
<p>The main challenges are the following:</p> <ul style="list-style-type: none"> • Difficulty in securing specialists in providing alternatives to inappropriate practices • Difficulty in obtaining the necessary database and to conduct assessment and monitoring for marine resources • Non-availability of a socio-economic systematic national programme and long term studies and action plan • Need to further promote and apply the concept of sustainable and wise use of biodiversity components • Increased demand by locals for goods and services from natural resources • Overexploitation of biological resources in some sites and villages • Short term priority; principle of sustainability not well understood and recognized by the locals • Needs for regular awareness and training for locals at national level on environmentally friendly activities such as organic farming, establishment of nurseries, and production of biodiversity based food and products through wise use etc... • Lengthy process for the issuance of new legislation <p>Briefly, institutional weaknesses, lack of awareness, lack of inter-sectoral coordination, lack of human</p>	

capacity, lack of financial resources and lack of awareness constitute the main challenges.

Please provide any other relevant information.

Box XVIII.

Goal 9	Maintain socio-cultural diversity of indigenous and local communities.	
Target 9.1	Protect traditional knowledge, innovations and practices	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
<p>The target 9.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: To protect agricultural ecosystems and maintain native biological diversity: - Establish traditional farms to maintain and propagate the traditional or " heritage" varieties or breeds that are being replaced by " modern" varieties</p> <p>Objective 2: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities: - Identify all types of traditional industries such as salt production and sponge fishing</p>		

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action mentioned under objective 1 in the section above is related to the agriculture biodiversity
b) Inland water			
c) Marine and coastal	X		The national action mentioned under objective 2 in the section above is related to the marine and coastal ecosystem
d) Dry and subhumid land			
e) Forest			
f) Mountain			
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
<p>The target 9.1 is incorporated in the 2005 NBSAP addendum 2005.</p> <p>The protected areas project promotes a strategy on the use of traditional knowledge for conservation, use and protection of the local communities' intellectual property rights.</p> <p>Despite the fact that the protection of traditional knowledge, innovations and practices is not clearly adopted in the recent draft strategy of the Protected Areas prepared by the Ministry of Environment, the management plans already developed and endorsed for most nature reserves incorporate policies promoting traditional knowledge, innovations and practices of local communities.</p>			
IV) Please provide information on current status and trends in relation to this target.			
Within the protected areas project there are increased levels of community participation and use of			

indigenous knowledge systems in biological resource use and sustainable management practices.

Some activities were initiated in this regard, e.g. in the Al-Shouf Cedars Nature Reserve, a programme is currently running to restore the disappearing traditions and practices of local communities, especially those related to non wood forest products and intermediate products. Moreover, the Al-Chouf Cedars Nature reserve is implementing a study project, in collaboration with ArabMab/ UNESCO programme about the relationship between cultural and biological diversity. The study will be used to sensitize policy makers, development practitioners, media professionals, relevant NGOs and community leaders on the interdependence between cultural and biological diversity. It is intended to present low cost and innovative means of biodiversity conservation that rely mainly on the local knowledge.

The Agrobiodiversity project has conducted socio-economic surveys to assess the use of target species and related local knowledge, and made zoning using local community knowledge.

Under the MedWetCoast project, training of women in Aamiq has been done on organic/agro-food to be sold in the community-owned shop, and promoted traditional fishing practices in Tyre. The effort is now put on the training of local eco-guides as a way of creating partnership with local communities to use marine and coastal resources in a sustainable manner.

There is no policy or law for the protection of traditional knowledge. Other means of protecting local community or traditional knowledge are not well known or explored.

A multi Sectoral Task Force on traditional Knowledge is attempting to rectify the situation.

Current intellectual property regimes do not provide adequate protection for the traditional knowledge, as they consist of the regular provisions that can be found in copyright, patent, and trademark laws. Special provisions (or law) should be enacted to provide adequate protection for traditional knowledge.

Within the Top-UP Biodiversity Enabling Activity, the MoE has prepared a draft law regulating access to and benefit Sharing of biological and genetic resources of Lebanon. The issue of traditional knowledge was not covered in the draft Law because the Ministry of Economy & Trade is engaged in discussing it on an international level, and is likely to include in its future legislative initiatives.

V) Please provide information on indicators used in relation to this target.

The indicators set for the national actions in relation to this target is the following:

- Activities already started and ongoing. New improved traditional varieties introduce to local, regional, and international markets

VI) Please provide information on challenges in implementation of this target.

The lack of a law for the protection of the traditional knowledge is a challenge. Also, the un-coordinated approach to documentation of local community and traditional knowledge hampers efforts to protect it. Lack of trained personnel in this area and lack of financial means are also a problem.

VII) Please provide any other relevant information.

Box XIX.

Target 9.2	Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing	
National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		

The target 9.2 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :

Objective 1: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:

- Develop incentives taxation measures and penalties

Objective 2: Protect coastal and marine Ecosystems and biodiversity:

- Develop partnerships and coordinate action with public and private sector and conduct public awareness campaigns

Objective 3: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:

- Enhance the concept of integrated village developing traditional industries and other related activities associated with coastal areas such as olive oil and carob production

Objective 4: Expand and manage the protected areas system in terrestrial, marine and fresh water environments

- Lease lands for use and avoid ex-appropriation
- Recruits locals to work on site (guards, technicians, etc.) and provide suitable training

National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		The national action mentioned under objective 1 in the section above is related to the agriculture biodiversity
b) Inland water	X		The national actions mentioned under objective 4 in the section above cover inland water.
c) Marine and coastal	X		The national actions mentioned under objectives 2 and 3 in the section above are related to the marine and coastal ecosystem. The national actions mentioned under objective 4 in the section above cover marine and coastal ecosystem.
d) Dry and subhumid land			
e) Forest			The national actions mentioned under objective 4 in the section above cover terrestrial ecosystem which include forest, mountain, dry and subhumid lands.
f) Mountain			

Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No

b) Yes, into national biodiversity strategy and action plan

X

c) Yes, into sectoral strategies, plans and programmes

Please provide details below.

The target 9.2 is incorporated in the 2005 NBSAP addendum 2005.

Please provide information on current status and trends in relation to this target.

Refer to target 9.1.

Regarding the right of local communities to benefit-sharing, this was regulated in regards to the use of genetic resources through the draft law on "Access and Benefit Sharing" (ABS). One of the major principles provided for in the Draft Law is the sovereignty of the State over biological resources; the State exercises said right in the name and for the benefit of the local communities. The draft law provided for the respect of the rights of the farmers and the continued customary use of genetic resources and related knowledge.

According to the draft ABS law, any scientific, medical, pharmaceutical, commercial, or legal results derived from the access to, use, research, experiments, and developments of the biological and genetic resources should be shared in a fair and equitable manner with the State and the local

land owner or owners and communities whose biological and genetic resources were involved in the activity of the applicant. The sharing of such results shall be provided for in an Access and Benefit Sharing Agreement, which will describe the benefit sharing method that the parties to the agreement shall agree upon, and the share of each one of them.

Please provide information on indicators used in relation to this target.

The indicators set for the national actions in relation to this target is the following:

- Activities already started and ongoing. New improved traditional varieties introduce to local, regional, and international markets
- Number of farmers changing pest management practices
- Lower import of toxic agrochemicals
- Number of private public partnerships
- Cost of the lease
- Number of jobs / businesses created and related directly or indirectly to protected areas
- Number of fire fighting infrastructure in the protected areas
- Number of people working in forest fighting
- Number of people with management plans

Please provide information on challenges in implementation of this target.

Lengthy process for the endorsement of the "Access and Benefit-Sharing" law by the Parliament, lack of awareness, lack of inter-sectoral coordination, lack of human capacity, lack of financial resources, loss of traditional knowledge due to the lack of special provisions and laws regarding the protection for traditional knowledge.

Please provide any other relevant information.

Box XX.

Goal 10	Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources.	
Target 10.1	All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements	
National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
<p>The target 10.1 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: Protect coastal and marine ecosystems and biodiversity:</p> <ul style="list-style-type: none"> - Develop national action plan within the framework of Mediterranean action plan - Enhance law enforcement authorities and put in place a coordination mechanism, introduce the concept of environmental police <p>Objective 2: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:</p> <ul style="list-style-type: none"> - Develop new legislation or update existing ones regarding fishing periods, fishing technology, gear ... to protect turtles and marine mammals <p>Objective 3: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:</p> <ul style="list-style-type: none"> - Regulating hunting - Legislate to eliminate the conflict of interest between the governmental institutions <p>Objective 4: To protect agricultural ecosystems and maintain native biological diversity:</p>		

- Conduct environmental /economic assessments for new construction projects, building, roads in agricultural areas
 - Develop policies and legislation for the sustainable use of agro biodiversity
 - Establish land use and zoning standards and policies
- Objective 5: Develop partnerships with the environmental community at the national, regional, and international level:
- Establish a national biodiversity committee or department to oversee agrobiodiversity policies and programs
 - Investigate potential linkages with biotrade initiatives, the CGB and other initiatives particularly with regards to controlling bioprospecting and ensuring sustainable benefits

National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		The national actions set under objectives 4 and 5 mentioned in the section above are related to agrobiodiversity
b) Inland water			
c) Marine and coastal	X		The national actions set under objectives 1 and 2 mentioned in the section above are related to marine and coastal ecosystems
d) Dry and subhumid land			
e) Forest			The national actions set under objective 3 mentioned in the section above are related to forest and mountain ecosystems
f) Mountain			

Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No

b) Yes, into national biodiversity strategy and action plan

c) Yes, into sectoral strategies, plans and programmes

X

X

Please provide details below.

The target 10.1 is incorporated into the NBSAP addendum 2005.

Furthermore, this target is incorporated in the national action plans for the conservation of coastal and marine biodiversity which were developed by the Ministry of Environment in 2002 within the context of the SAP_BIO project.

Please provide information on current status and trends in relation to this target.

The Ministry of Environment has finalized in May 2005 the development of a draft law regulating access to and benefit sharing of biological and genetic resources of Lebanon.

The draft law was based on the Bonn guidelines set out under the Convention on Biological Diversity. (Refer to question 110).

According to the draft law, any person or entity that wishes to access the biological and genetic resources of Lebanon, should file an application with the Competent National Authority (CNA). Once said application is approved, the CNA invites the applicant to sign an ABS Agreement with the CNA, and the land owner or owners and/or the local communities where the biological and genetic resources are located. The signed agreement will constitute the applicant's official authorization to access the biological and genetic resources. Four types of agreements are provided for in the Draft Law: (1) Academic research agreement, (2) Conservation of biological and genetic resources agreement, (3) Commercial research agreement, and (4) Commercial exploitation agreement.

In addition, the National Biosafety Framework regulating the trans-boundary movements of GMOs and LMOs is in its final stages of development through the UNEP-GEF project implemented by the Ministry of Environment.

Please provide information on indicators used in relation to this target.

Indicators set for the various national actions in relation to this target are the following:

- National action plan for marine conservation developed
- Monitoring of prey populations
- Monitoring of number of licensed hunters
- Monitoring of number of violation
- Monitoring of number of protected species
- Joint implementation of biodiversity related projects
- National policy and framework for limiting urban expansion in agricultural lands and associated semi natural areas
- Evaluation of agricultural areas
- Incentive to farmers producing local varieties
- Number of cultivated varieties, number of farmers, areas of cultivation, Policy and draft law produced
- Land use guidelines taking into consideration biodiversity in general and agrobiodiversity more specifically
- New products deriving from agrobiodiversity, new values

Please provide information on challenges in implementation of this target.

The challenge consists in the lengthy process needed for a law to be endorsed by the Lebanese Parliament, thus the draft "Access and Benefit Sharing" law will require a long period of time for its issuance. Meanwhile, the transfer of genetic resources from Lebanon is not properly regulated.

Multi-institutional working group should be established under the Ministry of Environment for gap analyses and the development of working plan to get progress in the field of genetic resources and to implement international plans and strategies.

Please provide any other relevant information.

Box XXI.

Target 10.2	Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
<p>The target 10.2 is incorporated in the 2005 NBSAP addendum 2005, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: Protect coastal and marine ecosystems and biodiversity:</p> <ul style="list-style-type: none"> - Integrate action with international activities and pool expertise <p>Objective 2: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:</p> <ul style="list-style-type: none"> - Collect entry fees and reduce process for the local population <p>Objective 3: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <ul style="list-style-type: none"> - Support all institutions involved in environmental and biodiversity conservation including municipalities 		

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		The national action set under objective 3 mentioned in the section above is related to agrobiodiversity
b) Inland water			
c) Marine and coastal	X		The national action set under objective 1 mentioned in the section above is related to marine and coastal ecosystem. The national action set under objective 2 mentioned in the section above is related to in-situ conservation and covers marine and coastal ecosystem.
d) Dry and subhumid land			The national action set under objective 2 mentioned in the section above is related to in-situ conservation and covers forest, mountain, dry and subhumid lands
e) Forest			
f) Mountain			
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
The target 10.2 is incorporated into the NBSAP addendum 2005.			
IV) Please provide information on current status and trends in relation to this target.			
<p>The Ministry of Environment has finalized in May 2005 the development of a draft law regulating access to and benefit sharing of biological and genetic resources of Lebanon.</p> <p>According to the draft law on "access and benefit sharing", any scientific, medical, pharmaceutical, commercial, or legal results derived from the access to, use, research, experiments, and developments of the Lebanese biological and genetic resources should be shared in a fair and equitable manner with the State and the local land owner or owners and communities whose biological and genetic resources were involved in the activity of the applicant. The sharing of such results shall be provided for in an Access and Benefit Sharing Agreement, which will describe the benefit sharing method that the parties to the agreement shall agree upon, and the share of each one of them.</p> <p>The draft ABS law is still pending endorsement; meanwhile the benefits arising from the commercial use of the Lebanese genetic resources are not shared with the Government of Lebanon. Until the development of the draft law, the only officially "access and benefit sharing" signed agreement was between the Lebanese Agricultural Research Institute and the Royal Botanic Gardens, Kew (UK) whereby seeds were collected and stored in the latter institute within the context of the millennium seed bank project.</p>			
V) Please provide information on indicators used in relation to this target.			
<p>Indicators set for the various national actions in relation to this target are the following:</p> <ul style="list-style-type: none"> - Business plans developed for each protected area - Identified areas by each municipality for management of agrobiodiversity 			
VI) Please provide information on challenges in implementation of this target.			
<ul style="list-style-type: none"> - Until the endorsement of a national ABS law, benefits sharing are not regulated. - The endorsement of draft legislation by the Parliament is a lengthy process 			
VII) Please provide any other relevant information.			

Box XXII.

Goal 11	Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention.	
Target 11.1	New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20	
National target: Has a national target been established corresponding to the global target above?		
a) No		X
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		

Please provide details below.			
No national target corresponding to the global target 11.1 was developed. NA (Lebanon is a country with economy in transition).			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			X
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
Please provide information on current status and trends in relation to this target.			
<p>Lebanon has received financial assistance from different donors mainly from the GEF to fulfill the requirements of the CBD. The financial resources provided to the Government of Lebanon were used through the implementation of various international projects related to the conservation and sustainable use of biodiversity as follows:</p> <p>Funds from the Global Environment Facility:</p> <ul style="list-style-type: none"> - Biodiversity Enabling Activity (MOE/UNDP) - Top-Up Biodiversity Enabling Activity (MOE/UNDP) - Protected Areas Project (MOE/UNDP) - Development of National Biosafety Framework (MOE/UNEP) - Agrobiodiversity project (MOE/UNDP) - Integrated Management of Cedar Forests in Lebanon in cooperation with other Mediterranean Countries with particular emphasis on Tannourine-Hadath El-Jebbeh Cedar forest' (MOE/UNEP) - PDF-A funds for the project "Income generation through sustainable use of natural resources in Yammouneh": 25 000 US \$ "(MoE/World Bank) <p>In addition to the funds from the following donors:</p> <ul style="list-style-type: none"> - The "Fond Francais pour l'environnement mondial" (FFEM) for the MedWetCoast project - Ec_Life Third Countries for the "Stable Institutional Structure for Protected Areas Management" project "SISPAM" (MOE/UNDP) - GTZ for the project on Combatting Desertification in Lebanon" (CoDel) (MOA/UNDP) <p>Lebanon is continuously developing projects proposals and submitting them to related donors to attract necessary funds in order to implement projects that allow meeting its obligations towards the CBD.</p>			

Please provide information on indicators used in relation to this target.
Please provide information on challenges in implementation of this target.
Please provide any other relevant information.

Box XXIII.

Target 11.2	Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4		
National target: Has a national target been established corresponding to the global target above?			
a) No			X
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			
Please provide details below.			
No national target corresponding to the global target 11.2 was developed.			
National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			
Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			X
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
Please provide information on current status and trends in relation to this target. Refer to sections related to articles 16 and 18 in this report.			
Please provide information on indicators used in relation to this target.			
Please provide information on challenges in implementation of this target.			
Please provide any other relevant information.			

Global Strategy for Plant Conservation (GSPC)

The Conference of the Parties, in decision VI/9, annex, adopted the Global Strategy for Plant Conservation. Parties and Governments are invited to develop their own targets with this flexible framework. The Conference of the Parties considered the Strategy as a pilot approach for the use of outcome oriented targets under the Convention. In decision VII/10, the Conference of the Parties decided to integrate the targets into the reporting framework for the Third National Reports. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box XXIV.

Target 1. A widely accessible working list of known plant species, as a step towards a complete world flora.	
I) Has your country established national target corresponding to the above global target?	
Yes	
No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
<p>The target 1 was incorporated in the 2005 NBSAP addendum, however it covers only one national action according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP, as follows:</p> <p>Objective: a. Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <ul style="list-style-type: none"> - Assess the present status of agrobiodiversity at the national level. <p>In several areas of work, initiatives are taken to establish databases for known plant species.</p>	
III) Current status (please indicate current status related to this target)	
<p>The main global assessment of the biological diversity in Lebanon was made in 1996 through the Biodiversity Country Study developed by the Ministry of Agriculture in collaboration with UNEP with GEF funds. The Country study is constituted of nine volumes and includes an inventory of fauna and flora in the different ecosystems in Lebanon including terrestrial, fresh water and agricultural habitats. The Biodiversity Country Study is posted on the MoA website: http://www.agriculture.gov.lb/</p> <p>More specific assessment of plant species were done to specific sites through international projects, research, thesis and other initiatives as follows:</p> <ul style="list-style-type: none"> - Assessment of fauna and flora in four nature reserves (Al-Shouf Cedars, Horsh Ehdén, Palm Islands and Tyre Coast) in addition to one marsh (Ammiq wetland) were conducted within the Protected Areas Project (MoE/UNDP/GEF). The assessment includes an inventory of the species with identification of threatened, rare, endemic and noteworthy species. The first assessment was executed by the NCSR in 1999 and was followed by a second phase in 2004 which was executed by the Lebanese University and covered assessment and monitoring of biodiversity in the five mentioned sites. - A preliminary inventory of flora and fauna was conducted in the Yammouneh Nature reserve located in the Bekaa area within the project: "Income generation through sustainable use of natural resources in Yammouneh" funded by the Global Environment Facility (GEF) through PDF-A (Project Development Funds). The project was executed by the Ministry of Environment and the World Bank (GEF implementing agency) in collaboration with the American University of Beirut and a local NGO "GreenLine Association for Conservation" (2001). 	

- Biodiversity surveys in two coastal and marine sites located in South Lebanon (Damour and Naqura) were achieved within the Coastal Areas Management Programme (CAMP) funded by UNEP/MAP and implemented by the Ministry of Environment. This activity was conducted in aim to carry out the necessary assessment for the declaration of Naqura marine and coastal area and Damour beach and Damour river basin as Specially Protected areas at national and Mediterranean level under the SPA protocol related to Barcelona Convention.
- A new project funded by the FAO and executed by the MOA (2004-2005) entitled "national forest and tree inventory and assessment in Lebanon" consists of conducting a field evaluation of forest status in Lebanon in order to develop a forest map and conduct a field truthing. The Forest Resource Assessment (FRA) has undertaken inventories and assessment in selected forest transects all over the country.
- A study in Rihane Mountain areas (located in South Lebanon) was undertaken by a local NGO "GreenLine Association for Conservation" and a private sector "South for Construction" (1999). Based on this preparatory studies and another one, Rihane areas is awaiting its declaration as protected area.
- A more recent study was conducted by a joint group of researchers from the National Council for Scientific Research and the Lebanese University during 2002-2004 in Rihane Mountain. Based on this study, a nomination file was prepared and submitted in 2005 to Unesco Headquarter for its declaration a Biosphere Reserve.
- Assessment and identification of the coastal flora of Lebanon was carried out thorough the Darwin Initiative project on coastal vegetation (1999-2002): A collaborative project implemented by the Plant Sciences Department at the American University of Beirut, Royal Botanical Garden Kew (UK) and the University of Reading .
- An encyclopedia of medicinal plants was prepared by Mr. Michel Hayek (researcher in LARI), it includes many volumes containing list of all Lebanese medicinal plants with description of their characteristics, values, benefits and way of use.
- Scientific study report on the plant diversity of Ehden forest natural reserve. Lebanon: Ministry of Environment. (Semaan, M. & R. Haber 1998).
- *A Thousand and One Flowers of Lebanon*. Beirut: Publications of the LEBANESE UNIVERSITY, Natural Sciences Section 22. 309 pp. (in English, title in French and Arabic) (Tohmé, G & H, 2002).
- Etude preliminaire du phytoplankton des eaux cotieres Libanaises par la methode d'Utermohl, Rapp. Comm. Int. Mer Medit. 27(7): 83-84 (Abboud, M., 1981).
- Hydrographic conditions and plankton of the Lebanese marine water., VII Science Meeting, LAAS, 21-24 March 1981, Beirut (Lebanon), p. 86. (Abboud-Abi Saab, M., Lakkis, S. & Zeidane, R., 1981).
- Survey of Microplankton in Lebanese coastal waters, Proceedings III Conf. Arab Biologists 3-6 November 1984, Amman, (Jordan), p.67. (Abboud-Abi Saab, M. 1984).
- PhD Study on Perspectives for Sustainable use of Cedar forest in Lebanon (Sattout, E. 2004).
- Master Study on Ecogeographic Studies of endemic plants in Ehden forest reserve (Sattout, E. 1998).
- Floristic assessment of selected communities along the Lebanese coastal zone. Lebanon: American University of Beirut. Pp. 103. (Thesis). (Dagher, M. R. 2001).
- Inventaire exploratoire des conditions écologiques de la réserve naturelle d'Horsh Ehden au Liban. Belgique: Faculté Universitaire des Sciences Agronomiques de Gembloux. Pp. 116 (Thesis). (Brunin, E. 2000).
- Floristic assessment of selected communities along Lebanese littoral zone. Lebanon: American University of Beirut. Pp. 88. (MSc. Thesis). (Dardas, M. M. 2000).

Detailed list on biodiversity studies and publications will be posted on the Lebanese Biodiversity Clearing House which is under construction accessible through: <http://www.moe.gov.lb/>

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

See current status above, in addition:

Internet-based information are very efficient in the concerned government institutions dealing with biodiversity issues: the Ministry of Environment's site (<http://www.moe.gov.lb>) , the Ministry of Agriculture's site (<http://www.agriculture.gov.lb>), the Lebanese Agriculture Research Institution (LARI) site: (<http://www.Lari.gov.lb>), the National Center for Scientific Research site (LARI): (<http://www.cnrs.edu.lb>); which play an important role in disseminating information, publications, studies and various outputs of different activities and projects carried out by these institutions including

assessment and inventories of plant diversity and production of lists of plant species.

The list of Plant species in the various Lebanese ecosystems covered by the Biodiversity Country Study is widely accessible through both the Ministry of Agriculture's website and the Country study which was published in nine volumes and widely disseminated.

The list of plant species developed by the NCSR is accessible through two main databases established by the Center:

1) ABHASS which is a database on research projects sponsored by NCSR in medicine, agriculture, environment, basic sciences, engineering and technology, economy, and related fields

2) CNRS database which is the on-line catalog on "books, monographs, reports, theses, and research publications" held by the library in the Documentation Centre. These databases are linked to AGRIS, CARIS, CINDA, INIS, ENSDF (USA), CORDIS, CEA publications, FAO on line Catalog and INIST.

The list of plant species within the nature reserves developed through the assessment and inventory carried out by the MoE will be published soon and will be accessible to all concerned.

The list of coastal species developed through the Darwin Initiative project on Lebanese coastal vegetation (AUB_ RBG Kew- University of Reading) was disseminated on a CD-Rom including all the outputs of the project.

Outputs of the research and studies conducted by the scientists and researchers on plant diversity are available in the various relevant publications.

A national database on different publications, studies and thesis related to biodiversity was prepared by MoE through the Top-Up Biodiversity Enabling Activity Project and will be posted on the Lebanese Biodiversity Clearing House. The database covers various publications about biodiversity including those related to plant diversity.

In relation to legislative measures: Exchange of information was endorsed through national legislation; the law for the protection of environment (law444/02) introduces the principle of public participation which stipulates - among other issues- that every citizen has the right to access to environmental information as per rules and regulations in force.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

No indicators used

VI) Constraints to achieving progress towards the target

Insufficient financial support and lack of plant taxonomists.

VII) Any other relevant information

Box XXV.

Target 2. A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels.

I) Has your country established national target corresponding to the above global target?

Yes

No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

Yes

No

X

Please specify

The target 2 was incorporated in the 2005 NBSAP addendum, however it covers only one national action according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP as follows:

Objective: Assess the present status of agrobiodiversity at the national level.

In addition, all national plans and programmes state to ensure suitable protection status for threatened species.

III) Current status (please indicate current status related to this target)

See Current status of Target 1 above.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)
Assessment of the conservation status of the plant species is done regularly inside the nature reserves. In other sites, assessment was done in pilot sites within the context of some projects activities (refer to "current status" mentioned in target 1 above) The list of plant species developed by MoE for each nature reserve includes the identification of the rare, endangered and threatened plant species in addition to other key plant species.
V) Progress made towards target (please specify indicators used to monitor progress towards the target)
The latest updates in the Lists of specially Protected Plant Species and species with Limited Exploitation were made in 2004-2005 by the Protected Areas Project (MoE/UNDP/GEF) within four nature reserves in addition to one wetland; and outside protected areas in some specific sites of importance by the regional PDF-B project "Design, Testing and Evaluating of Best Practices for <i>in situ</i> Conservation of Economically Important Wild Species" (MoE/UNEP/GEF) and by the regional Agrobiodiversity Project (LARI/UNDP/GEF).
VI) Constraints to achieving progress towards the target
Lack of funding.
VII) Any other relevant information

Box XXVI.

Target 3. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
The NBSAP covered the conservation and sustainable use of biodiversity in the various ecosystems and areas. The activities set by the NBSAP include the encouragement and support of research projects, scientific and technical studies to promote conservation and sustainable use of biodiversity but it didn't cover "the development of models" in all the sections, this was covered in the section related to Agrobiodiversity through the following activities:	
<ul style="list-style-type: none"> a- Issue guidelines for the conservation of Agrobiodiversity b- Develop guidelines and standards for designing and implementing an Agrobiodiversity-monitoring network on a rable land 	
III) Current status (please indicate current status related to this target)	
Practical guidance to ensure plant conservation and sustainable use activities are also reflected in the management plans of particular protected nature sites. In addition, Lebanon is implementing some regional projects related to the conservation and sustainable use of biodiversity. Such projects use research and practical experience to improve the conservation and sustainable use of biodiversity but it didn't develop relevant models and protocols for applying best practices in this regards however practical guidelines on in-situ conservation, sustainable use and monitoring were covered by the various reports and outputs of these projects and were transferred to relevant stakeholders through trainings sessions and workshops.	
<ul style="list-style-type: none"> a. The regional project "Conservation of Wetlands and Coastal Zones in the Mediterranean" (MedWetCoast) is a Mediterranean initiative under Ramsar Convention. This five-year project (2002-2006) includes Lebanon, Albania, Egypt, Morocco, the Palestinian Authority and Tunisia, and aims towards biodiversity conservation and proper management of coastal areas and wetlands. The regional component is managed and coordinated by the Regional Facilitation Unit (RFU) based in Tour du Valat in France. In Lebanon, the project is executed by the Ministry of Environment, managed by UNDP and funded by the FFEM (Fonds Francais 	

pour l'Environnement Mondial). The MedWetCoast Lebanon project's overall development objective is to conserve globally endangered species and their habitats, recognizing nature conservation as an integral part of sustainable human development while improving the capacity of governmental and non-governmental agencies to address biodiversity conservation issues in two main sites, the Tyre Coast Nature Reserve and the Wetlands of Aamiq.

- b. Lebanon is a partner in the regional project 'The Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East project' along with Jordan, Syria and the Palestinian Authority. The project also known by the Agrobiodiversity project has started in 1999 and is currently in its final stages, it is funded by the GEF and implemented by the Lebanese Agriculture Research Institute (LARI) and UNDP and brings together several international organizations. Implementing partners include several local academic and research institutions and NGOs. Many experts were involved in this project to characterize the floristic richness and study the genetic diversity and potential uses of selected species.

The project aims at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing *in-situ* and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in the Beqa'a plain in Lebanon. The four participating countries exchange technologies, methodologies and information towards sustainable use of biological diversity. Several training sessions, workshops and thematic meetings were conducted at the regional level. The project developed and disseminated -among other outputs- a leaflet containing information on the importance of agrobiodiversity and ways of its conservation in addition to a description about in-situ conservation versus ex-situ conservation and advantages and disadvantages of both in-situ and ex-situ.

- c. The 'Integrated Management of Cedar Forests in Lebanon in collaboration with other Mediterranean countries' covers Algeria, Cyprus, Lebanon, Morocco, Syria and Turkey. The project started in Lebanon in July 2004, is funded by the GEF, implemented by UNEP and executed by the MoE with the collaboration of the American University of Beirut. This three-year project aims at addressing a serious new threat namely the infestation by a new insect of the genus *Cephalcia* affecting 70% of the Tannourine –Haddath El-Jebbeh forest trees, one of the 12 surviving stands of cedar forests in Lebanon and also the largest. The main objective of this project is to identify the root causes of this environmental threat and means of managing the insect population based on research and practical experience and to elaborate an action plan for integrated management of forests including assessment of insect infestation in cedar forests in the Mediterranean region in order to prevent any future outbreak in the region and to protect cedar forests from this serious disease.

Some bilateral cooperation was conducted between academic and research institutions in Lebanon and foreign institutions in other parties. As an example is the collaborative agreement between the Lebanese Agriculture Research Institute (LARI) and the Royal Botanic Gardens Kew which provides grants to promote conservation and sustainable use of biodiversity. This partnership is one of 15 partnerships of the Millennium Seed Bank (MSB) project and is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology.

Lebanon & Syria initiated negotiations under the umbrella of ArabMab Network to establish a transboundary biosphere reserve. Representatives from both countries attended capacity building workshops of relevance to this matter.

The Ministries of Education in Lebanon and France have agreed since 1996 on a programme "C.E.D.R.E." of cooperation for evaluation and development of research. The agreement promote research studies in biodiversity and sustainable development.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Practical guidance on how to conduct plant conservation and sustainable use activities based on results of research and practical experience of management were transferred to all concerned through different activities, reports and awareness materials developed by the different projects related to biodiversity (refer to the section above). Sustainable use is being addressed in an ideal approach in any forum or strategy or action plan devised. However there was no development of relevant models and protocols for applying best practices in this regard.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)
No indicators used
VI) Constraints to achieving progress towards the target
Lack of specific action plans Lack of capacity
VII) Any other relevant information

Box XXVII.

Target 4. At least ten percent of each of the world's ecological regions effectively conserved.	
I) Has your country established national target corresponding to the above global target?	
Yes	
No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target 4 is covered by the NBSAP in the section related to in-situ Conservation in Lebanon under the following objective: Expand and manage the protected areas system in terrestrial, marine and fresh water environments. It's also incorporated in the 2005 NBSAP addendum.	
III) Current status (please indicate current status related to this target)	
The nature reserves in Lebanon are continuously increasing from three in 1996 to eight in 2002, with continuous requests submitted to the Ministry of Environment for the declaration of new sites. The existing eight nature reserves cover the following ecological regions: six of them represent forests and mountains areas while two represent coastal and marine ecosystems. Accordingly, there is a need to increase the representation of coastal and marine ecosystems in protected areas as well as the natural grasslands.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

Effective conservation of relevant sites in various ecosystems is ensured through the establishment of nature reserves and proper management of these sites. Accordingly, the MoE has taken necessary measures for the establishment of the existing nature reserves; Seven of the nature reserves were established by law while one was established by a ministerial decision issued by the Minister of Environment and there is an on-going work for the establishment of additional new nature reserves from various ecosystems.

The MoE through the protected areas project and the MedWetCoast projects has ensured the proper management and daily follow-up of these reserves to achieve a favorable conservation status of the sites and the plant species and communities that they harbor. Furthermore, the MoE has developed a draft framework law for the establishment and management of nature reserves in Lebanon, the draft law is pending endorsement.

This target 4 is considered under the objective 4 "Establishment of a strategic and sustainable management for the Protected Areas in Lebanon" which is formulated within the framework of the Protected Areas draft Workplan prepared by MoE in 2005; especially the sub-objective 4.1 "Strategic Planning for Conservation" which implies a complete survey of sites that are known to be of biodiversity significance and which merit protection, provided that they represent all Lebanese ecosystems, including inland water, marine and coastal areas, dry and subhumid land, forests and mountains.

The MoE with funds from the EC-Life Third Countries and in collaboration with UNDP_Lebanon has started in February 2004 the implementation of a project aiming at identifying and institutionalizing proper and approved structure for the management of protected areas at both the macro and micro levels. The legal, structural, financial and human aspects will be tackled to end – up with a comprehensive and integrated management model. The project is entitled "Stable Institutional Structure for Protected Areas Management: "(SISPAM" project)

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Cover of protected nature areas of the territory of Lebanon has increased from 0.13% in 1992 to 1,82% in 2005.

VI) Constraints to achieving progress towards the target

Lack of inter-sectoral coordination, lack of financial resources

VII) Any other relevant information

Box XXVIII.

Target 5. Protection of fifty percent of the most important areas for plant diversity assured.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

Yes

No

X

Please specify

The target 5 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:

Objective 1: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:

- Characterize and classify protected areas (mapping, protection, rehabilitation, updating inventories)
- Manage sites according to the local needs and requirements

Objective 2: Protect coastal and marine ecosystems and biodiversity:

- Establish nature reserves and marine parks representing major ecogeographical areas

Objective3: Provide stability to permit the establishment of ecological equilibrium

- Protection of remarkable natural habitats, characterized by their ecology
- Creating land zoning maps

Objective 4: To save, use and study biodiversity in fresh water ecosystem

- Mountain lakes have to be extended. All appropriate areas should be included
- Wetland conservation areas should be established and aquaria set-ups must be implemented

The MoE is about to develop an Action Plan for Protected Areas which will include among other targets the identification of important biodiversity sites that deserve protection and classification under different categories of protected areas according to relevant criteria.

II) Current status (please indicate current status related to this target)

Important areas for plant diversity are protected through the establishment of nature reserves by MoE and through the declaration of protected forests by MoA:

The Ministry of Environment (MoE) has declared by law, seven locations as nature reserves, and an additional one by ministerial decision. All of them cover 1.8% of the Lebanese territory.

The Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in facto. Moreover, fifteen forests were declared protected explicitly by ministerial decisions issued from the Ministry of Agriculture under the amended Forest Code.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The MoA is assuring the protection of forests by developing necessary legal measures in this regard, by declaring protected forests sites and by the enforcement of the forest code and relevant legislation through its forests guards who ensure the protection on site.

The eight nature reserves established by MoE include plant species richness in addition to endemic, rare and endangered species. The MoE is providing overall supervision and guidance to all activities related to the conservation and management of these nature reserves. The execution on site is ensured by the reserves' management teams and its local committees who are present in the sites and conduct daily follow-up. Furthermore, there is an ongoing work by MoE to establish further nature reserves on important biodiversity areas.

The MoE has also executed two projects related to protected areas conservation and management. The first project was funded by GEF and aimed at the conservation and management of Al Shouf Cedars Nature Reserve, Horsh Ehdn Nature Reserve, and Palm Island Nature Reserve. The second project was funded by the FFEM and aimed at the conservation and management of the Tyre Coast Nature Reserve and the Ammiq Wetland. Due to the increasing number of protected areas, a need arose for a management structure capable of handling the requirements for an integrated management of protected areas. The current management structure involves the Ministry of Environment, local community representatives, and local management teams. This structure has so far achieved conservation on the sites and is a model of protected area management being more and more adopted worldwide. This structure however, has weaknesses and can become totally dysfunctional.

Responding to the need for an improved and more capable management structure for protected areas, The Ministry has acquired the approval of the European Commission for the execution of a project entitled "Stable Institutional Structure for Protected Areas Management" (SISPAM). The project aims at finding the best institutional structure to manage the protected areas. The project aims also at ensuring the financial, legal, and technical sustainability of the structure and the protected areas. The SISPAM project will develop an action plan for protected areas which will include the identification of important sites for biodiversity including plant diversity that should be protected under different categories of protected areas.

This target 4 is considered under the objective 4 "Establishment of a strategic and sustainable management for the Protected Areas in Lebanon" which is formulated within the framework of the Protected Areas draft Workplan prepared by MoE in 2005; especially the sub-objective 4.1 "Strategic Planning for Conservation" which implies a complete survey of sites that are known to be of biodiversity significance and which merit protection. This sub-objective also requires mapping of the identified important areas using GIS technology and checking their need for protection.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Eight protected areas are already established and many protected forests are already declared and

few micro reserves, mainly of demonstration types, for rare, threatened, and economic plant species are recently established outside these protected areas. Moreover, work is on-going to establish more nature reserves thus protected areas are continuously increasing in number.

VI) Constraints to achieving progress towards the target

Lack of funding

VII) Any other relevant information

Box XXIX.

Target 6. At least thirty percent of production lands managed consistent with the conservation of plant diversity.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

Yes

No

X

Please specify

The target 6 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:

Objective 1: Protect agricultural ecosystems and maintain native biological diversity:

- Support research on sustainable use of resources, applied agro biodiversity, grazing pressure and biological diversity, and encourage research on native forage crops

Objective 2: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:

- Implement environmental education in schools
- Develop agro biodiversity extension programs and training centers

Objective 3: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:

- Support environmental and socio-economic research
- Establish a national database for crops, weeds, and livestock, including a database for tracking livestock migration

Objective 4: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:

- Introduce sustainable harvesting into some protected areas like honey production

Objective 5: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:

- Establishing ecological tourism associated with public awareness and environmental education
- Develop, finalize and monitor an exhaustive database
- Reforestation, along with related issues as forest management, plant nurseries, choice of species to be used in this process
- Encouraging and supporting research projects (fundamental and applied) related to the specific goals set for the development of terrestrial ecosystems
- Scientific and technical studies to promote development and sustainable use of medicinal plants and melliferous species

Objective 6: Manage forests and ranges for productivity and sustainability

- Choose the optimal criteria (age and diameter) for a sustainable use
- Determine the ideal structure of forest tree populations

Objective 7: Protect endemic species by utilizing them in urban landscape:

- Plant roadsides with endemic species
- Cover land fills, roadsides, roofs, balconies, etc. ... with local green vegetation

Objective 8: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:

Objective 9: To save, use and study biodiversity in fresh water ecosystem:

- Implement public awareness programmes in water use, quality and saving
- Research, building of capacities and studies on fresh water biodiversity should be expanded and supported

This target is also incorporated into the Protected Areas Workplan where harvesting or other uses of living resources shall not cause species or populations to become threatened.

III) Current status (please indicate current status related to this target)

Forestry and Agriculture sectoral programmes encourage maintenance of complex of biological diversity, species being part of this complex.

The management of the production lands in a way consistent with the conservation of biodiversity is not executed at national level to various production sites; this was fully applied in the pilot sites covered by the Agrobiodiversity project and in some sites where organic farming is implemented.

The Agrobiodiversity project (1999-2005) promotes the conservation of wild relatives and landraces of important agriculture species in Lebanon through introducing the *in-situ* or on-farm conservation mechanisms for the conservation and sustainable use of Agrobiodiversity with the direct participation of local farming and rural communities.

Within the agrobiodiversity project many species targeted by the project are wild relatives and landraces varieties including cereals, forage legumes and wild fruit trees. The project established several demonstration sites in the drylands of the Baalbeck caza, Bekaa valley, in three main sites, namely Ham/Maaraboun, Aarsal and Nabha. These areas are experiencing a quick loss in their Agrobiodiversity due to habitats conversion, adoption of new varieties and overgrazing.

As for organic farming, it is executed in Lebanon through some private initiatives, NGOs and within the context of projects for the production of vegetables in some relevant production areas; it promotes agriculture practices that avoid significant adverse impacts on plant species and ecosystems by avoiding excessive release of agro-chemicals.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The Agrobiodiversity project conducted many activities to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation; this includes water and soil conservation demonstrations, rangeland management and rehabilitation demonstrations, and establishment of local fattening unit, seed cleaning unit and field gene banks and improvement of landraces yields.

In addition, the agrobiodiversity project continued for the fourth year the support of the fruit trees nursery operated by Aarsal Rural Development Association (ARDA) for the production of around 9,000 seedlings/year of wild fruit trees and plantlets (from cuttings) of local varieties of several targeted species. These seedlings are distributed to the farmers and used in reforestation activities. As for sectoral strategies and programs, the protection of species is integral part of different habitats protected.

The project encouraged the local farmers to continue growing landraces and conducted many activities to improve their current land use practices. It has also organized many training courses and workshops for the farmers, local communities and technicians to build their capacity in conservation and sustainable use of Agrobiodiversity.

The project reviewed national legislation related to biodiversity and management of natural resources in Lebanon and conducted a study that proposes mechanism for the national domestication of international conventions and agreements related to the conservation and sustainable use of Agrobiodiversity. The project produced a final document on policy options at the farm-household, community and national levels that promote sustainable Agrobiodiversity conservation and sustainable management of natural resources.

In regards to forestry, sustainable forest management practices are being more applied by the MoA and within the context of some projects activities.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Indicators set for the various national actions in relation to this target are the following:

- Diversification of agriculture sector with alternative native crops
- Domestication of edible fodder crops
- income generation from sustainable use of agrobiodiversity resources
- Production of educational material and integration of conservation and sustainable use of biodiversity in school curricula
- Number of training centers and number of training workshops

- Research driven changes in agrobiodiversity practices
- Database available to IT and non IT accessible areas
- Number of local populations directly or indirectly involved/impacted in the protection and use of protected areas
- Number of sites hosting ecotourism activities
- Number of individuals involved in ecotourism
- Valuation/assessment of indigenous knowledge
- Number of tourists and size of activities
- Implemented ecotourism projects and number of eco-tour operators
- Increase number of native plants produced locally
- Increase number of native plant nurseries
- Increase number of native species used for reforestation and planting projects in public areas including public forests and gardens
- Research findings responding to stated priorities in the NBSAP
- New raw and processed products based on native species production and collection
- Number of sustainable practices in forest management that lead to small entrepreneurial activities
- Expansion of semi natural areas based on habitat regeneration
- Number of nurseries producing native trees and shrubs
- Number of projects implemented in relation to the use of endemic species in urban landscape
- Increase in green cover
- Production of educational material in school
- Realize an update distribution of fresh water species: common, rare, endemic and threatened

In addition, Lebanon has adopted the Criteria & Indicators for sustainable forest management and is currently working on their application. However, this would be a sterile initiative in the absence of a National Forest Programme. Instead, the National Action Programme to Combat desertification was prepared with the assistance of GTZ, UNDP and a contribution from the MOA.

VI) Constraints to achieving progress towards the target

The NAP has briefly tackled the issues of the constraints facing the forestry sector. They were identified as follows:

Inadequate legislation governing the management of the forest

Inadequate forestry policy.

Lack of human, technical and financial resources needed for a proper protection and management of forests.

Frequent incidence of forest fires.

Over-grazing.

Inadequate skills for the protection of forests against pests and diseases

Limited public awareness.

Rapid and unplanned urbanization.

Clearance of forests for agricultural purposes.

VII) Any other relevant information

Box XXX.

Target 7. Sixty percent of the world's threatened species conserved <i>In-situ</i>.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target 7 is covered by the NBSAP under the section related to <i>in-situ</i> conservation and was	

covered by the 2005 NBSAP addendum.

III) Current status (please indicate current status related to this target)

The threatened species are conserved *in-situ* in the nature reserves which include many rare and endangered plant species in addition to endemic species.

The Agrobiodiversity project (1999-2005) promotes the conservation of wild relatives and landraces of important agriculture species in Lebanon through introducing the *in-situ* or on-farm conservation mechanisms for the conservation and sustainable use of Agrobiodiversity, the project covered demonstration sites in the drylands of the Baalbeck caza, Bekaa valley in which the species are under threat due to habitats conversion, adoption of new varieties and overgrazing.

Legal measures to protect some individual species were issued to only few target species.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The Code of Environment (Law number 444 of 8 August 2004) calls under the Article 48 to conduct a survey and establish a list of fauna and flora species in particular threatened species and calls for the establishment of plans for the protection of species *in-situ* and to establish a monitoring system to access biological and genetic resources and use them in accordance with the international conventions and agreements signed or ratified by Lebanon.

Forest code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in fact.

Under the amended forest code, the MoA has declared fifteen protected forests through ministerial decisions. In addition, the MoA has issued ministerial decisions for the protection of some target species as follows:

- Ministerial Decision regulating the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996)
- Ministerial prohibiting the picking and export of ferrula plant & roots (Decision 340/1 dated 1/8/1996)
- Ministerial Decision issued in 1998 regulating the harvesting of oregano and salvia (Decision 177/1)

The MoE is ensuring the *in-situ* conservation of threatened species through the establishment of nature reserves in areas of biodiversity significance including plant species richness and threatened species among other species of importance; eight nature reserves were declared and work is ongoing for the declaration of future protected areas.

Through the protected areas project the Ministry of Environment focuses on the restoration, maintenance, and reduction of decline of populations of species of selected taxonomic groups, using a methodology based on prioritizing the species which merit conservation starting from globally threatened species (Highest priority) to regionally threatened, endemic, nationally rare and finally noteworthy species. The same is adopted by the MedWetCoast and the Camp Project.

The Agrobiodiversity project has conducted a study on the present status (2000) of agrobiodiversity and genetic resources in the Beqaa dryland and has assessed the factors of degradation of target crops. The project has introduced *in-situ* or on farm conservation mechanism for the conservation of several target crops (wild relatives and landraces/varieties) including cereals, legumes and fruit trees in target areas which are experiencing a quick loss in their agrobiodiversity. For this purpose, the project has introduced and demonstrated simple technical options in the project sites and has supported research studies on field crops landraces yield improvement. In addition, the project has enhanced national capacity building in *in-situ* conservation and sustainable use of Agrobiodiversity by organizing national and regional training courses and workshops for farmers, local communities and technicians and providing support to university students to conduct research studies related to Agrobiodiversity.

Furthermore, The Ministry of Environment has executed the national part of a PDF-B (Project Development Funds) regional project entitled "Design, Testing and Evaluating of Best Practices for *in situ* Conservation of Economically Important Wild Species" funded by GEF.

The PDF-B phase supported the design and preparation of a proposal for the full GEF project that will facilitate the *in-situ* conservation and management of economically important wild plant species including threatened species in Lebanon, Egypt, Morocco and Turkey. During this phase, The Plant species and their locations and sites were identified by the four participating countries as important to agriculture or forestry or to have some other economic importance, (such as medicinal or aromatic species) in natural or semi-natural habitats and in traditional farming systems, priorities were also given to endemic, rare or threatened species.

The regional proposal for the full project was finalized by FAO in September 2005 and will be submitted to GEF soon for approval.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)
Indicators set for the various national actions in relation to this target are the following: <ul style="list-style-type: none"> - Red list produced - Number of identified needs that are fully or partially fulfilled through regulated access to protected areas - Land price - Number of sites protected - Laws/decrees drafted - New sites developed for responsible tourism - Increase the balance of water - Number of wetlands protected
VI) Constraints to achieving progress towards the target
A broader coverage of species and more coordinated work.
VII) Any other relevant information

Box XXXI.

Target 8. Sixty percent of threatened plant species in accessible <i>Ex-situ</i> collections, preferably in the country of origin, and 10 percent of them included in recovery and restoration programmes.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
<p>The Target 8 is incorporated in the NBSAP which calls to provide a framework for the protection, restoration, sustainable use, monitoring and benefit sharing with stakeholders of all biodiversity in Lebanon through several activities, of them the establishment of ex-situ conservation practices. Also this target is incorporated in the 2005 NBSAP addendum. Based on the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP it covers the following national objectives and actions:</p> <p>Objective1: Provide stability for the ecosystems to permit the establishment of ecological equilibrium -Rehabilitation of abandoned or degraded zones</p> <p>Objective2: Protect endemic species by utilizing them in urban landscape</p> <ul style="list-style-type: none"> - Join efforts with municipalities and NGOs to use and conserve local germplasm <p>Objective 3: To protect agricultural ecosystems and associated biodiversity</p> <ul style="list-style-type: none"> - Establish a central gene bank where different ex-situ conservation activities are performed including breeding <p>Objective 4: Expand and manage the protected areas system in terrestrial, marine and fresh water environments</p> <ul style="list-style-type: none"> - Locate rehabilitation nurseries within the protected areas and use indigenous species <p>Objective 5: Protect endemic species by utilizing them in urban landscape</p> <ul style="list-style-type: none"> - Establish germplasm banks including cryo preservation and tissue culture to conserve living material. 	
III) Current status (please indicate current status related to this target)	

A national framework and policy related to *ex-situ* conservation have not yet been implemented. However, the Lebanese Agricultural Research Institute has been involved in several initiatives related to *ex-situ* conservation.

The *ex-situ* conservation of plant species in Lebanon include the establishment of seed-banks, nurseries and herbaria by the research and academic institutions and within some projects activities; in addition nurseries were established by various NGOs.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The five years reforestation national project initiated by the Ministry of Environment since 2002 provided the technical, human and financial resources to reforest degraded forest areas in various Lebanese villages throughout the country, the reforestation programme covers the areas where forests trees were lost during the civil war or due to forests fires and other factors.

Forestry and Agriculture sectoral programmes encourage of maintenance of complex of biological diversity, species being part of this complex. The Agrobiodiversity project continued for the fourth year the support of the fruit trees nursery operated by an NGO: Aarsal Rural Development Association (ARDA) for the production of around 9,000 seedlings/year of wild fruit trees and plantlets (from cuttings) of local varieties of several targeted species. These seedlings are distributed to the farmers and used in reforestation activities. In addition, the project established several demonstration sites on rangeland rehabilitation.

Within the context of the Agrobiodiversity Project the Lebanese Agricultural Research Institute focused on wild relatives and land races of cereals mainly wheat and barley for seed increasing in defined plots. Part of the resulting seeds was distributed to farmers while the rest were conserved.

The current in-house capacity of Lebanese Agricultural Research Institute for storing seeds is limited to grapes and cereals, however the infrastructure is inadequate. Therefore, through an international agreement with ICARDA and Royal Botanic Gardens Kew, collections are sent to Kew for storage and there are discussions for the establishment of a gene bank in collaboration with the Lebanese Agricultural Research Institute.

The Lebanese Agricultural Research Institute has been involved in several initiatives related to *ex-situ* conservation (For example: nurseries of *Origanum syriacum* and *Salvia fruticosa libaniticum*). There are two objectives driving Lebanese Agricultural Research Institute's policy regarding *ex situ* conservation which are the conservation of genetic resources and the conservation of varieties adapted to the local environment. In addition, the Lebanese Agricultural Research Institute has established nurseries for grapes, almonds, and figs.

The American University of Beirut has established a Biodiversity Seed Bank for Lebanon.

Several herbaria exist for the preservation of plant species. These have been established at the National Council for Scientific Research, Lebanese Agricultural Research Institute, American University of Beirut and within the protected areas.

The AFDC (NGO) has established a large scale nursery in Ramlieh for its reforestation campaigns. The Environmental Protection Committee in Tripoli (NGO) and a Real estate company in Beirut have established medium scale nurseries of indigenous plants for their urban forestation campaigns. Another small scale tree nursery in the Ammiq Wetland used mainly for demonstration purposes. The American University of Beirut initiated a USDA funded collaboration with the Ohio State University (USA) to investigate the propagation and production of native trees with potential ornamental value. Within the same project, several wild plants with potential medicinal value are being researched for propagation and production purposes. Private nursery owners are participating in these activities.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Indicators set for the various national actions in relation to this target are the following:

- Number of native species stored in seed banks
- Number of accessions in seed banks
- Small income generated
- Number of nurseries/ number and type of planted species
- Number of germplasm labs
- Number of conserved native species
- Number of staff involved in this field
- Level of equipment used or bought

FAO indicators for crop genetic diversity are also considered.

VI) Constraints to achieving progress towards the target

Lack of funding
Absence of National Botanical Garden
VII) Any other relevant information

Box XXXII.

Target 9. Seventy percent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
<p>The target 9 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: To protect agricultural ecosystems and associated biodiversity</p> <ul style="list-style-type: none"> - Establish a central gene bank where different ex-situ conservation activities are performed including breeding <p>Objective 2: Expand and manage the protected areas system in terrestrial, marine and fresh water environments</p> <ul style="list-style-type: none"> - Locate rehabilitation nurseries within the protected areas and use indigenous species <p>Objective 3: Protect endemic species by utilizing them in urban landscape</p> <ul style="list-style-type: none"> - Establish germplasm banks including cryo preservation and tissue culture to conserve living Material. <p>The code of Environment (Law number 444 of 8 August 2004) calls under the Article 48 the Ministry of Environment to establish a surveillance system to access biological and genetic resources and use them in accordance with the international conventions and agreements signed or ratified by Lebanon.</p>	
III) Current status (please indicate current status related to this target)	
<p>Some socio-economic valuable plant species such as medicinal plants are conserved within the current existing nature reserves. In addition, the protected areas and the MedWetCoast projects promote the conservation and wise use of living resources inside the nature reserves.</p> <p>Several wild relatives and landraces of important agriculture species including cereals (wheat, barley), legumes (lentil, vetch, <i>lathyrus</i> spp. Medics, clovers), as well as wild fruit trees (apricot, cherries, almond, pear, pistachio, fig) and <i>Allium</i> species were conserved in-situ or on farm by the Agrobiodiversity project in the project sites located in the drylands of the Baalbeck Caza.</p> <p>Genetic diversity of various crops and other socio-economic valuable plant species are conserved ex-situ by the Lebanese Agriculture Research Institute and in the seed bank established by the American University of Beirut and through the establishment of nurseries.</p>	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
<ul style="list-style-type: none"> - The laws establishing the nature reserves regulate the activities in the sites and prohibit human activities having adverse effects on the biodiversity within the reserve thus promoting the in-situ conservation of medicinal plants inside the nature reserves and other plants of economic importance. - Efforts deployed to protect forest resources are declared through various legislation for example, the forest code amended in 1996 (law 558 of 24/7/96) lists all conifer species under a protection and thus forbids their cutting and exportation. - The Lebanese Agricultural Research Institute (LARI) has been involved in several initiatives related to ex-situ conservation of plant genetic resources such as the establishment of 	

nurseries of *Origanum syriacum* and *Salvia fruticosa libaniticum* in addition to grapes, almonds, and figs.

In addition, a collaborative agreement was signed between LARI and the Royal Botanic Gardens Kew which provides grants to promote conservation of plant genetic resources through establishment of seed bank. This partnership is one of 15 partnerships of the Millennium Seed Bank (MSB) project and is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology. Collections are sent to Kew for storage and there are discussions for the establishment of a gene bank in collaboration with the Lebanese Agricultural Research Institute.

- The Agrobiodiversity project (1999-2005) introduced the *in-situ* and on-farm mechanisms for the conservation and sustainable use of Agrobiodiversity target species with the direct participation of the local farming and rural communities. The project has conducted many experiments to demonstrate to the farmers the effect of seed cleaning and treatment on yield improvement in addition to several demonstration experiments for seed increase and the improvement of landraces in defined plots. Part of the resulting seeds was distributed to farmers while the rest were conserved. Furthermore, the project supported a local NGO "ARDA" in establishing a local nursery for the production of around 9,000 seedlings/year of targeted wild and local varieties of fruit trees. These seedlings were distributed to the farmers and used in reforestation activities
- The American University of Beirut has established a seed bank for Lebanon.
 - A design and preparation of a proposal for a regional project that will facilitate the *in-situ* conservation of economically important wild plant species in Lebanon, Egypt, Morocco and Turkey will be finalized soon and will be submitted for the GEF for funding. The project document was prepared through PDF – B funds from the UNEP/GEF by three supporting agencies: FAO_Diversitas and IPIGRI and the four participating countries. The project entitled "Design, Testing and Evaluating of Best Practices for *in situ* Conservation of Economically Important Wild Plant Species" will cover target plant species in selected sites in the four countries.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Indicators set for the various national actions in relation to this target are the following:

- Number of native species stored in seed banks
- Number of accessions in seed banks
- Small income generated
- Number of nurseries/ number and type of planted species
- Number of germplasm labs
- Number of conserved native species
- Number of staff involved in this field
- Level of equipment used or bought

FAO indicators for crop genetic diversity are also considered.

VI) Constraints to achieving progress towards the target

A broader coverage of species and more coordinated work.

VII) Any other relevant information

Box XXXIII

Target 10. Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.

I) Has your country established national target corresponding to the above global target?

- a) Yes
- b) No

X

Please specify

The target 10 is not covered by any national target set in the NBSAP.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

- a) Yes
- b) No

X

Please specify
<p>This target was incorporated in the national action plans developed by the Ministry of Environment in 2002 within the context of the SAP_BIO project mainly by three action plans as follows:</p> <p>Action Plan 1: Establish Conservation Strategies for Coastal Habitats: Objective: Develop management strategies for the control of exotic invasive species. Monitoring population dynamics of exotic invasive species and their effects on local marine fauna and flora will allow for better innovation of management strategies.</p> <p>Activity: Assessing the impact of invasive species on coastal habitats</p> <p>Action Plan 2: Establish a Monitoring strategy for the marine and coastal biodiversity: Action 1: Monitoring of the marine populations dynamics through underwater visual census UVC technique Action 2: Monitoring of the marine biodiversity by using the bio-indicators method</p> <p>Action Plan 3: Develop necessary legislation for the conservation of marine and coastal biodiversity Objective: Develop national legislation to avoid the loss and negative impact to marine fauna and flora and ensure their conservation Action: Review, develop and /or and update national legislation related to invasive species</p>
III) Current status (please indicate current status related to this target)
<p>The National Marine Center in Lebanon is associated with CIESM Atlas of exotic species which provides a comprehensive survey on recent marine "immigrants" in the Mediterranean. CIESM covers various aspects of the marine science such as geo-physical, chemical and biological processes around six committees including living resources and marine ecosystem and coastal ecology. However, researchers at the National marine centre have recorded several alien algal and planktonic species.</p> <p>Current research conducted by the Lebanese University and the National Council for Scientific Research on algae in freshwater systems confirmed the presence of alien species that are imported with the feet of migrating waterfowls and waders.</p> <p>However, identified pathways of national scale are: import of timber, boats, import of adult trees for horticulture and import of alien plant species for landscaping. Status of pathways of alien species is that these exists to some extent, but are increasing because of increased international trade and travel activities.</p>
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)
<p>There are no management plans in place for alien species threatening plants and associated ecosystems. In regards to legal measures, only one ministerial decision was issued by the Minister of Agriculture to protect the native cedar tree <i>Cedrus Libani</i>: Decision 108/1, dated 12/9/1995 which prohibits the import and introduction of all cedar seeds and plants.</p> <p>The issue of alien species has not yet been considered as a priority area deserving immediate attention. As a result, there is no financial support devoted for this issue which in turn translates to very superficially and scattered measures taken to identify the status of alien invasive species in Lebanon. Another factor hindering progress in this area, relates to the lack of taxonomic experts in various fields.</p>
V) Progress made towards target (please specify indicators used to monitor progress towards the target)
<p>No national indicators have been developed. At the individual level of researchers two indicators are used:</p> <p>1-Number of outbreaks of new pests. 2- limits of the areas in which alien species are found.</p>
VI) Constraints to achieving progress towards the target

Constraints identified in the action plan related to the “the Establishment of Conservation Strategies for Coastal Habitats” within the SAP_Bio project in relation to this target are the following:

- Difficulty in securing specialists in marine sciences, more specifically taxonomists
- Difficulty in obtaining the necessary database for marine and coastal fauna and flora (not available)
- Difficulty in obtaining recent background data on invasive species and their impact (not available)
- Lack of detailed topographic and bathymetrical maps for the Lebanese coast
- Non-availability of a research vessel for long term studies
- Non-availability of up to date field and laboratory research equipment
- Difficulty in obtaining funding for marine research
- Absence of financial support for academic research institutions in terms of marine research
- Lack of awareness on the level of concerned public institutions (ministries)
- Lack of support by the political body to protect the coastal zone
- Lengthy process for the issuance of new legislation

Constraints to controlling invasive species in terrestrial ecosystems:

All the invasive species do not have national strategies or plans for minimizing distribution of these species. Whereas the main trans-regional distribution pathways are not controlled to prevent invasion of new species, distribution of invasive species within the country is not enough controlled.

VII) Any other relevant information

Box XXXIV

Target 11. No species of wild flora endangered by international trade.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target 11 is incorporated in the 2005 NBSAP addendum, however it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP only one national action: Objective: Protect endemic species by utilizing them in urban landscape: - Apply strict regulations on imported germplasm (plants, animals, fish, birds,...)	
III) Current status (please indicate current status related to this target)	
Several species of the plant families might be subject to international trade, but no official data exist. Access to the Lebanese wild flora is not yet regulated by law however, the MoE through the Top-Up Biodiversity Enabling Activity Project has recently developed a drafty law on “Access and Benefit Sharing”. The implementation of this law once endorsed will regulate the access and the export of wild flora.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
Forest code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and “other coniferous forests” in Lebanon are protected in facto. In addition the MoA has issued many decisions to protect some target species: - Ministerial Decision regulating the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996) - Ministerial Decision (Decision 108/1, dated 12/9/1995) prohibiting the import and introduction of all cedar seeds and plants	

<ul style="list-style-type: none"> - Ministerial prohibiting the picking and export of ferrula plant & roots (Decision 340/1 dated 1/8/1996) - Ministerial Decision issued in 1998 regulating the harvesting of oregano and salvia (Decision 177/1) <p>Furthermore, species of wild flora in the nature reserves are protected from international trade.</p>
V) Progress made towards target (please specify indicators used to monitor progress towards the target)
No indicators selected
VI) Constraints to achieving progress towards the target
<ul style="list-style-type: none"> - Applying strict regulations on exported germplasm is not considered. - CITES convention is not yet ratified or accessed in Lebanon. - Trainings for border guards and custom officers about restricted species have been not taking place. - Only some target plant species are covered by national legislation regulating their trade, there is a need to cover additional target individual species. - Wild flora outside the nature reserves are not protected properly from international trade - Lack of proper enforcement of relevant legislation regulating the picking of wild flora.
VII) Any other relevant information

Box XXXV

Target 12. Thirty percent of plant-based products derived from sources that are sustainably managed.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
<p>The target 12 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:</p> <p>Objective 1: Protect agricultural ecosystems and maintain native biological diversity:</p> <ul style="list-style-type: none"> - Support research on sustainable use of resources, applied agro biodiversity, grazing pressure and biological diversity, and encourage research on native forage crops <p>Objective 2: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:</p> <ul style="list-style-type: none"> - Implement environmental education in schools - Develop agro biodiversity extension programs and training centers <p>Objective 3: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <ul style="list-style-type: none"> - Support environmental and socio-economic research - Establish a national database for crops, weeds, and livestock, including a database for tracking livestock migration <p>Objective 4: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:</p> <ul style="list-style-type: none"> - Introduce sustainable harvesting into some protected areas <p>Objective 5: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:</p> <ul style="list-style-type: none"> - Develop, finalize and monitor an exhaustive database - Reforestation, along with related issues as forest management, plant nurseries, choice of species to be used in this process - Encouraging and supporting research projects (fundamental and applied) related to the 	

<p>specific goals set for the development of terrestrial ecosystems</p> <ul style="list-style-type: none"> - Scientific and technical studies to promote development and sustainable use of medicinal plants and melliferous species <p>Objective 6: Manage forests and ranges for productivity and sustainability</p> <ul style="list-style-type: none"> - Establish a forest management plan - Choose the optimal criteria (age and diameter) for a sustainable use - Determine the ideal structure of forest tree populations
<p>III) Current status (please indicate current status related to this target)</p> <p>Plant based products which are derived from sources that are sustainably managed don't cover a large number of products, this was achieved mainly within the Agrobiodiversity project in the project's three sites for several target crops (wild relatives and landraces varieties) including cereals, legumes and wild fruit trees and within projects related to organic farming which are applied through some private initiatives, academic institutions and NGOs.</p> <p>Sustainable management of forests is not applied at national level; it is only implemented in by some local authorities and private land owners in some forest sites.</p>
<p>IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)</p> <p>Area of organic farming has increased from 4000 m² in 2003 to 317000 m² in 2004 and to 450000 m² in 2005.</p> <p>No data available on existing amount of organic products obtained and sold.</p> <p>Management plans were developed to three pilot forest sites covering a surface of 3000 hectares through a project executed by the MoA and funded by the European Community but the plans were not implemented.</p>
<p>V) Progress made towards target (please specify indicators used to monitor progress towards the target)</p> <p>Indicators set for the various national actions in relation to this target are the following:</p> <ul style="list-style-type: none"> - Diversification of agriculture sector with alternative native crops - Domestication of edible fodder crops - income generation from sustainable use of agrobiodiversity resources - Production of educational material and integration of conservation and sustainable use of biodiversity in school curricula - Number of training centers and number of training workshops - Research driven changes in agrobiodiversity practices - Database available to IT and non IT accessible areas - Number of local populations directly or indirectly involved/impacted in the protection and use of protected areas - Number of sites hosting ecotourism activities - Number of individuals involved in ecotourism - Valuation/assessment of indigenous knowledge - Increase number of native plants produced locally - Increase number of native plant nurseries - Increase number of native species used for reforestation and planting projects in public areas including public forests and gardens - Research findings responding to stated priorities in the NBSAP - New raw and processed products based on native species production and collection - Number of sustainable practices in forest management that lead to small entrepreneurial activities - Expansion of semi natural areas based on habitat regeneration - Number of nurseries producing native trees and shrubs - Number of projects implemented in relation to the use of endemic species in urban landscape - Increase in green cover - Production of educational material in school - Realize an update distribution of fresh water species: common, rare, endemic and threatened
<p>VI) Constraints to achieving progress towards the target</p>

Main constraints are faced in agriculture sector where intensive farming is developing with lack of enough incentives to ensure biologically friendly development of agriculture. Better linkage with management of the species harvested and the management of production areas through an ecosystem based approach to management. The application of the Code of Environment (law number 444), especially its paragraph "g" of the Article 48 (contribution of the nationals and the public and private sectors to the conservation of biodiversity and the sustainable use of the natural resources) constitutes another challenge.

VII) Any other relevant information

Box XXXVI

Target 13. The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

The target 13 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :

Objective 1: To protect agricultural ecosystems and associated biodiversity

- Establish a central gene bank where different ex-situ conservation activities are performed including breeding

Objective 2: Expand and manage the protected areas system in terrestrial, marine and fresh water environments

- Locate rehabilitation nurseries within the protected areas and use indigenous species

Objective 3: Protect endemic species by utilizing them in urban landscape

- Establish germplasm banks including cryo preservation and tissue culture to conserve living material

III) Current status (please indicate current status related to this target)

The Lebanese Agricultural Research Institute's programme aims to help safeguard valuable local livestock breeds and to preserve the genetic stock of local crop varieties.

The Agrobiodiversity project has conducted a study on the present status (2000) of agrobiodiversity and genetic resources in the Beqaa dryland and developed a national programme (2003) for the genetic resources in Lebanon focusing mainly on legal issues.

The Agrobiodiversity project has conducted socio-economic surveys to assess the use of target species and related local knowledge, and made zoning using local community knowledge. In addition, it implemented in-situ and on farm conservation of important wild relatives and landraces of agriculture species in three pilot sites with the direct participation of local farming and rural communities.

The Herders Cooperative in Aarsal established a fattening unit based on organic livestock and crop production with the support of the Agrobiodiversity Project, the GTZ Project on Combating Desertification in Lebanon, the AUB-IDRC Project, and the Green Line Association. The aim of the fattening unit is to decrease the pressure on the degraded rangeland while increasing the income of the herders in the region. The project provided and supported the planting of 5,000 shrub seedlings (Salsola and Atriplex) in the vicinity of the fattening unit and will provide the Herders Coop with feed blocks as additional source of feed for the animals in the unit. The project supports a fruit trees nursery operated by Aarsal Rural Development Association (ARDA) for the production of around 9,000 seedlings/year of wild fruit trees and plantlets (from cuttings) of local varieties of several targeted species. These seedlings are distributed to the farmers and used in reforestation activities.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)
<p>The Law for the Protection of the Environment calls for an elaboration of a system for controlling access to genetic resources in Chapter 8 concerning management of natural resources and conservation of biological diversity.</p> <p>The measures achieved in this regard cover mainly the activities implemented by the Agrobiodiversity project for the conservation of target species and the surveys conducted by the project including eco-botanical, socio-economic and indigenous knowledge surveys.</p> <p>There are no measures taken at national level to conserve the indigenous and local knowledge related to plant resources.</p>
V) Progress made towards target (please specify indicators used to monitor progress towards the target)
<p>Indicators set for the various national actions in relation to this target are the following:</p> <ul style="list-style-type: none"> - Number of native species stored in seed banks - Number of accessions in seed banks - Small income generated - Number of nurseries/ number and type of planted species - Number of germplasm labs - Number of conserved native species - Number of staff involved in this field - Level of equipment used or bought <p>FAO indicators for crop genetic diversity are also considered.</p>
VI) Constraints to achieving progress towards the target
<ul style="list-style-type: none"> - A broader coverage of species and more coordinated work. - Rapid population growth and high demand on economically important wild plant species are challenging the implementation of this target. - The lack of legal measures addressing indigenous and local knowledge
VII) Any other relevant information

Box XXXVII

Target 14. The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
<p>The target 14 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :</p> <p>Objective 1: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:</p> <ul style="list-style-type: none"> - Establishing ecological tourism associated with public awareness and environmental education - Develop, finalize and monitor an exhaustive database - Encouraging and supporting research projects (fundamental and applied) related to the specific goals set for the development of terrestrial ecosystems - Scientific and technical studies to promote development and sustainable use of medicinal plants and melliferous species <p>Objective 2: Protect endemic species by utilizing them in urban landscape:</p> <ul style="list-style-type: none"> - Expand public awareness and qualities of local biodiversity 	

Objective 3: Protect coastal and marine Ecosystems and biodiversity:

- Develop partnerships and coordinate action with public and private sector and conduct public awareness campaigns

Objective 4: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:

- Develop training programmes and awareness campaigns, particularly as regards the importance of conservation of biodiversity

Objective 4: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:

- Implement environmental education in schools
- Develop an education campaign on biodiversity conservation, to increase public awareness and the threats to biodiversity

III) Current status (please indicate current status related to this target)

All the international funded projects related to biodiversity which are implemented by the relevant government institutions in Lebanon mainly MoE, MoA and LARI include components related to public awareness about the importance of biodiversity and the need for its conservation. Plant diversity was integrated at a large extent within the public-awareness programmes related to these projects.

In addition to the projects activities, the various concerned government institutions implement public-awareness programmes in which biodiversity including plant diversity is covered.

Furthermore, local NGOs undertake various initiatives to integrate biodiversity conservation in their awareness programmes.

In relation to communication, Internet-based information are very efficient in the concerned government institutions dealing with biodiversity issues: the Ministry of Environment's site (<http://www.moe.gov.lb>), the Ministry of Agriculture's site (<http://www.agriculture.gov.lb>), the Lebanese Agriculture Research Institution (LARI) site: (<http://www.Lari.gov.lb>), the National Center for Scientific Research site (LARI): (<http://www.cnrs.edu.lb>); which play an important role in disseminating information, publications, studies and various outputs of different activities and projects carried out by these institutions including those related to plant diversity.

In relation to education, the NCSR is one of the major public institutions granting fellowships to Lebanese students to carry out higher studies (Ph.D) related to biodiversity and sustainable development.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Communication:

The Ministry of Environment is currently establishing the national biodiversity and biosafety clearing-house which will promote communication about all issues related to biodiversity.

A national database on biodiversity publications, thesis, and national institutions dealing with biodiversity was developed and will be posted on the Lebanese biodiversity clearing-house which will be linked on MoE website, CBD clearing-house and other sites of interest.

The NCSR has developed two main databases: 1) ABHASS which is a database on research projects sponsored by NCSR in medicine, agriculture, environment, basic sciences, engineering and technology, economy, and related fields and 2) CNRS database which is the on-line catalog on "books, monographs, reports, theses, and research publications" held by the library in the Documentation Centre. These databases are linked to AGRIS, CARIS, CINDA, INIS, ENSDF (USA), CORDIS, CEA publications, FAO on line Catalog and INIST.

Public-awareness:

The Service of Guidance and Awareness at the MoE is continuously organizing workshops and awareness campaign related to various environmental topics among them biodiversity. The Service prepares as well many awareness materials (posters, booklets, brochures etc..) and disseminates them to the different stakeholders.

With regards to international funded projects, the PAP, the MedWetCoast, the project to combat desertification and the Agrobiodiversity projects has organized many awareness campaigns (workshops, seminars, training sessions, exhibitions etc..) and has developed many awareness materials (booklets, posters, brochures, newsletters, T.V spots and documentary films..) covering the importance of plant diversity and the need for its conservation.

Furthermore, the Agrobiodiversity project has established an Agrobiodiversity unit at the Lebanese Agriculture Research Institute.

Education:

The Agrobiodiversity project (LARI, UNDP, GEF) (1999-2005) has provided four scholarships to students to carry out higher studies related to agrobiodiversity, the Tannourine project (MOE/UNEP/GEF) will provide as well four scholarships to students to continue a Masters degree in biodiversity field.

Moreover, the project assessed the status of the local schools and education in general in target areas. The study included recommendations for interventions and activities with the aim of improving the awareness of the local communities on the importance of biodiversity and covered as well a general review of the national education programs with reference to the importance given to the preservation of the environment in general and biodiversity in particular.

In this regard, the Agrobiodiversity Project conducted several training sessions for teachers and students from the Project Sites to increase their knowledge on the different issues stressing on Agrobiodiversity. The training sessions covered the following topics: Main global and national environmental problems, ecosystems, biodiversity richness of Lebanon, agrobiodiversity, establishment of school environmental clubs and conducting extracurricular activities, environmental education and teaching methodologies.

The Project also developed a curriculum guide, which proposes the integration of the biodiversity concepts into the education curricula (Arabic version available at the project website). The guide includes the matrix of biodiversity concepts and the incorporation of these concepts through the different courses and classes of the Lebanese education curricula.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Indicators set for the various national actions in relation to this target are the following:

- Production of educational material and integration of conservation and sustainable use of biodiversity in school curricula
- Number of training centers and number of training workshops
- Database available to IT and non IT accessible areas
- Number of local populations directly or indirectly involved/impacted in the protection and use of protected areas
- Production of educational material in school

VI) Constraints to achieving progress towards the target

Education and public awareness activities should be undertaken in order to prevent overexploitation of ecosystem capacity.

VII) Any other relevant information

Box XXXVIII.

Target 15. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

I) Has your country established national target corresponding to the above global target?

- a) Yes
- b) No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

- a) Yes
- b) No

X

Please specify

The target 15 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions:

Objective 1: Protect agrobiodiversity from deleterious agricultural practices, and develop and implement policies and practices to minimize loss of genetic diversity:

- c) Implement environmental education in schools
- d) Develop agro biodiversity extension programs and training centers

Objective 2: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:

- o Develop training programs and awareness campaigns, particularly as regards the importance of conservation of biodiversity

Objective 3: Expand and manage the protected areas system in terrestrial, marine and fresh water environments

- Recruits locals to work on site (guards, technicians, etc.) and provide suitable training

III) Current status (please indicate current status related to this target)

The Agrobiodiversity project aims at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing *in-situ* and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in the Beqa'a plain in Lebanon. The four participating countries exchange technologies, methodologies and information towards sustainable use of biological diversity. Several national and regional training sessions, workshops and thematic meetings were conducted by the project for farmers, local communities and technicians in areas related to project activities to build national capacity in conservation and sustainable use of Agrobiodiversity.

Training and capacity building about in-situ conservation and management of protected areas were conducted to the management teams of the nature reserves through the PAP and MedWetCoast project.

Training was also provided through initiatives undertaken by local NGOs and academic institutions.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The Agrobiodiversity project has conducted several trainings for local communities, farmers and researchers on integrated pest management, organic farming, orchard management practices, water harvesting techniques, GIS applications for management of Agrobiodiversity, quality seed production, proper and safe use of pesticides, soil and water resources management, plant taxonomy, management of NGOs, land tenure and nature resources management, improved apiculture techniques, agro-food processing, in-situ conservation, importance of plant genetic resources in sustainable agriculture, establishment and management of fruit trees nurseries, pasture and pasture nursery management. More than 800 individuals have benefited from those trainings in addition the project supported around 20 researchers and 10 farmers to attend many trainings provided at the regional level.

Many trainings and capacity building programmes were undertaken by the Protected areas project (PAP) and the MedWetCoast project for the management teams of the nature reserves, the training sessions include the following topics:

The PAP organized trainings and workshops on Protected Areas Management, flora Monitoring and plant species identification, Protected Areas Visitor Management, collaborative management, Ecotourism in Protected Areas, natural and Cultural Heritage Interpretation and Evaluation in addition to capacity building in plant taxonomy which covered the development of local herbaria, with the basic techniques and practices for their establishment provided through training workshop and weekly follow up visits to the nature reserves.

Under the MedWetCoast project, training of women in the project sites has been done on organic/agro-food to be sold in the community-owned shop, , eco-guide training program was conducted to train people from the local community to become guides in the protected areas and training to all protected areas management teams and committees and concerned ministries about management planning. In addition, the project has developed a training program to improve the management of Tyre Coast coast nature reserve which is one the project's sites. At the present 75% of this plan has been implemented.

As for the trainings conducted by the academic institutions and concerned NGOs:

The Darwin Initiative project on coastal vegetation (1999-2002): A collaborative project implemented by the Plant Sciences Department at the American University of Beirut, Royal Botanical Garden Kew (England) and the University of Reading aiming at assessing and identifying the coastal flora of Lebanon has conducted training workshop to build capacities on taxonomic

practices for various stakeholders as well as management teams of the nature reserves in Lebanon.

Collaboration between local NGO namely "Association for Forest Development and Conservation" (AFDC), Hans Seidel Foundation (German Foundation) and the Al-Shouf Cedars Nature reserve is established to build capacities of local communities and to fulfil the needs of management teams, interested individuals and eco-guide operators; in this regards a workshop was held on initiating practices on plant identification gathering wider participants from various regions in Lebanon.

AFDC organizes and implements yearly different capacity building activities (workshops, seminars, training courses, etc) targeting the local community at large at the Mediterranean Forest Development and Conservation Center of Lebanon (MFDCL). The capacity building activities deal with the issues of Forest fire fighting and prevention.

The Green Line NGO was involved in the implementation of the monitoring programme in the nature reserves carried out by the PAP and in the related training sessions on plant identification and plant taxonomy held to the nature reserves staff (those trainings were mentioned under the PAP activities above)

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Indicators set for the various national actions in relation to this target are the following:

- The number of training centers and number of training workshops has increased since 1999.
- The number of people working in nature conservation in general has increased since 1999.

VI) Constraints to achieving progress towards the target

Lack of funding

VII) Any other relevant information

Box XXXIX.

Target 16. Networks for plant conservation activities established or strengthened at national, regional and international levels.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

The target 16 is incorporated in the 2005 NBSAP addendum, it covers according to the alignment done with the national goals, objectives and actions set in the 1998 Lebanese NBSAP the following national objectives and actions :

Objective 1: Protect coastal and marine ecosystems and biodiversity:

- Organize a network of observation stations center around the national center for marine sciences or the NCSR and assist in the rehabilitation of research centers in general.

Objective 2: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:

- Develop guidelines and standards for designing and implementing an agro bio diversity monitoring network on arable land

III) Current status (please indicate current status related to this target)

There is no network designed exactly for plant conservation in Lebanon. However, the Communication networks are covered by the MoE homepage and will be promoted through the biodiversity clearing-house once it will become operational.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

c) Networking between nature reserves and Protected Areas Project at the Ministry of Environment established.
d) Framework related to agro biodiversity monitoring network developed
e) knowledge management (IT) established on MOE website and distributed as regular flyers
f) A national system or network of marine and coastal protected areas is under development.
V) Progress made towards target (please specify indicators used to monitor progress towards the target)
No indicators used
VI) Constraints to achieving progress towards the target
Lack of funding and coordination
VII) Any other relevant information

Box XL.

Please elaborate below on the implementation of this strategy specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

- ❖ Actions aiming at conservation of plant biological diversity have been conducted in Lebanon for years within the framework of some laws and decrees.
- ❖ In the recent legal fields, the law for the protection of Environment (law No. 444 dated 29/7/2002) has covered the conservation and sustainable use of biodiversity.
- ❖ Conservation of valuable species and those which are endangered globally or at national scale is one of the targets of the NBSAP implementation.
- ❖ The targets of the Global Strategy for Plant Conservation are partly fulfilled through governmental, public initiatives, programmes of work and substantive measures taken *in situ* (mainly within protected areas) and *ex situ* (nurseries).
- ❖ The main outcomes of the actions taken are improved national legislation concerning plant conservation and sustainable use of nature resources, augmented total area of protected nature reserves and increased capacity of people working in nature conservation. The main impact is raised awareness of public on nature conservation values but also increased negative attitude from landowners towards nature conservation due to lack of compensatory mechanisms, especially in forestry.
- ❖ The main constraints encountered in implementation of NBSAP are lack of human resources and funding.
- ❖ Therefore, measures taken in Lebanon contribute both to implementation of the Strategy for Plant Conservation, the 2010 Target, Millennium Development Goals and the National Strategy for Conservation and Sustainable Use of Biological Diversity.

Ecosystem Approach

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. At its second meeting, the Conference of the Parties has affirmed that the ecosystem approach is the primary framework for action under the Convention (decision II/8). The Conference of the Parties, at its fifth meeting, endorsed the description of the ecosystem approach and operational guidance and recommended the application of the principles and other guidance on the ecosystem approach. The seventh meeting of the Conference of the Parties agreed that the priority at this time should be facilitating implementation of the ecosystem approach. Please provide relevant information by responding to the following questions.

3. <input type="checkbox"/> ¹ Is your country applying the ecosystem approach, taking into account the principles and guidance contained in the annex to decision V/6? (decision V/6)	
a) No	
b) No, but application is under consideration	
c) Yes, some aspects are being applied	X
d) Yes, substantially implemented	

4. <input type="checkbox"/> Is your country developing practical expressions of the ecosystem approach for national policies and legislation and for implementation activities, with adaptation to local, national, and regional conditions? (decision V/6)	
a) No	
b) No, but development is under consideration	
c) Yes, practical expressions have been developed for applying some principles of the ecosystem approach	X
d) Yes, practical expressions have been developed for applying most principles of the ecosystem approach	

5. Is your country strengthening capacities for the application of the ecosystem approach, and providing technical and financial support for capacity-building to apply the ecosystem approach? (decision V/6)	
a) No	
b) Yes, within the country	X
c) Yes, including providing support to other Parties	

6. <input type="checkbox"/> Has your country promoted regional cooperation in applying the ecosystem approach across national borders? (decision V/6)	
a) No	
b) Yes, informal cooperation (please provide details below)	X
c) Yes, formal cooperation (please provide details below)	

Further comments on regional cooperation in applying the ecosystem approach across national borders.

Within the regional co-operation (particularly in the transboundary aspect), the ecosystem approach is partly developed and to a very limited extent (The 'Integrated Management of Cedar Forests in Lebanon in collaboration with other Mediterranean countries'; Marine Terraces Project, a regional project; ...).

7. Is your country facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach? (decisions
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¹ Please note that all the questions marked with have been previously covered in the second national reports and some thematic reports.

VI/12 and VII/11)	
No	
No, some programmes are under development	
Yes, some programmes are being implemented (please provide details below)	X
Yes, comprehensive programmes are being implemented (please provide details below)	
Further comments on facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach.	
<p>So far, no special measures have been taken to be directly oriented towards such exchange of experience, knowledge and technology, going beyond the forestry sector in which the ecosystem approach is implemented to the fullest extent.</p> <p>On another side, awareness raising to assist with the implementation of the ecosystem approach is clearly addressed through a research study at the Al-Shouf Cedar Biosphere Reserve which is currently conducted in cooperation with the UNESCO and in compliance with the Ecosystem Approach that recognizes the value of local and indigenous knowledge and the decentralization of the ecosystem adaptive management to the lowest levels as appropriate.</p>	

8. Is your country creating an enabling environment for the implementation of the ecosystem approach, including through development of appropriate institutional frameworks? (decision VII/11)	
a) No	
b) No, but relevant policies and programmes are under development	
c) Yes, some policies and programmes are in place (please provide details below)	X
d) Yes, comprehensive policies and programmes are in place (please provide details below)	
Further comments on the creation of an enabling environment for the implementation of the ecosystem approach.	
<p>Being in its early stages of development, the ecosystem approach is gradually implemented into management of protected areas (particularly of nature reserves and to a smaller extent – in wetlands through the technical assistance of the MedWetCoast Project in Lebanon).</p> <p>The ecosystem approach is first of all indirectly implemented in forestry, especially through training of forest guards. The tools used in forest management are especially adapted to that task: legal acts (the Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) and sectoral instructions (Guidelines for reforestation within the reforestation programme of the MoE; reforestation aiming at increasing watershed areas, etc.).</p> <p>Indirectly the ecosystem approach has been partly introduced into the wetlands according to which management plans of the year 2005 for integrated conservation, management and wise use are to be implemented. Under the Camp Project, the ecosystems are addressed together with their catchment basins in a comprehensive manner.</p> <p>Despite the fact that the legal, organizational and institutional conditions currently in force do not favour implementation of the ecosystem approach to marine areas. The Marine Terraces Project (2004-2006) that is implemented by the NCSR in collaboration with RAC/SPA can be considered a step forward to the creation of an enabling environment for the implementation of the ecosystem approach.</p> <p>Since ecosystem approach requires involving a wide range of experts and local stakeholders to ensure balanced way of the actions planned, a wide and open discussion process should be a part of the procedure thus avoiding dominance of narrow management approaches in the activities to be achieved. This is already initiated at the level of many projects.</p> <p>Probably the most obvious enabling environment for the implementation of the ecosystem approach is materialized in the Environment Impact Assessment (EIA) where the principles of the ecosystem</p>	

approach have been implemented, recognizing that EIA is applied to various development projects if there is a risk of affecting ecological processes. In fact, the procedure requires that the scope of the assessment is done on level of ecosystems, not only on level of habitats and species affected and it requires full synthesis of information provided by various field experts to ensure integration of all aspects that might be causing possible changes in the ecosystems.

C. ARTICLES OF THE CONVENTION

Article 5 – Cooperation

9. ■ Is your country actively cooperating with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biological diversity?

a) No	
b) Yes, bilateral cooperation (please give details below)	X
c) Yes, multilateral cooperation (please give details below)	
d) Yes, regional and/or subregional cooperation (please give details below)	X
e) Yes, other forms of cooperation (please give details below)	

Further comments on cooperation with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biodiversity.

Lebanon is part in many regional projects related to the conservation and sustainable use of biodiversity. Such cooperation provides concerned parties with necessary capacity building, exchange of knowledge and expertise, technology cooperation and transfer to improve the conservation and sustainable use of biodiversity.

Examples on such initiatives and projects are:

- The regional project "Conservation of Wetlands and Coastal Zones in the Mediterranean" (MedWetCoast) which is a Mediterranean initiative under the Ramsar Convention is being implemented in Lebanon, Albania, Egypt, Morocco, the Palestinian Authority and Tunisia for five years (2002-2006). Its main objective is biodiversity conservation and proper management of coastal areas and wetlands and it's being managed and coordinated regionally by the Regional Facilitation Unit (RFU) based in Tour du Valat in France. As for Lebanon, the project is being executed by the Ministry of Environment, managed by UNDP and funded by the FFEM (Fonds Francais pour l'Environnement Mondial). Its main overall development objective is to conserve globally endangered species and their habitats, recognizing nature conservation as an integral part of sustainable human development while improving the capacity of governmental and non-governmental agencies to address biodiversity conservation issues in two main sites, the Tyre Coast Nature Reserve and the Wetlands of Aamiq.

The regional project "The Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East project" along with Lebanon, Jordan, Syria and the Palestinian Authority. The project also known by the Agrobiodiversity project has started in 1999 and is currently in its final stages, it is funded by the GEF and implemented by the Lebanese Agriculture Research Institute (LARI) and UNDP and brings together several international organizations. Implementing partners include several local academic and research institutions and NGOs. Many experts were involved in this project to characterize the floristic richness and study the genetic diversity and potential uses of selected species.

The project aims at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing *in-situ* and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in the Beqa'a plain in Lebanon. The four participating countries exchange technologies, methodologies and information towards sustainable use of biological diversity. Several training sessions, workshops and thematic meetings were conducted at the regional level.

The regional project 'Integrated Management of Cedar forests in Lebanon in collaboration with other Mediterranean countries' covers Algeria, Cyprus, Lebanon, Morocco, Syria and Turkey. The project started in Lebanon in July 2004, is funded by the GEF, implemented by UNEP and executed by the MoE with the collaboration of the American University of Beirut. This three-

year project aims at addressing the serious threat arisen in the Tannourine forest, namely the infestation by a new insect of the genus *Cephalcia* affecting 70% of the Tannourine – Haddath El-Jebbeh forest trees located in North Lebanon and one of the 12 surviving stands of cedar forests in Lebanon and also the largest. The main objective of this project is not only to identify the root causes of this environmental threat but also to elaborate an action plan for integrated management of this important site.

Some bilateral cooperation was conducted between academic and research institutions in Lebanon and foreign institutions in other parties.

Examples on such initiatives:

a- The collaborative agreement between the Lebanese Agriculture Research Institute (LARI) and the Royal Botanic Gardens Kew which provides grants to promote conservation and sustainable use of biodiversity. This partnership is one of 15 partnerships of the Millennium Seed Bank (MSB) project and is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology.

b- Lebanon and Syria initiated in May 2002 negotiations under the umbrella of ArabMab Network to establish a transboundary biosphere reserve. Representatives from both countries attended capacity building workshops of relevance to this matter between 12 and 18 November 2004 in Germany.

c- The Ministries of Education in Lebanon and France have agreed since 1996 on a programme "C.E.D.R.E." of cooperation for evaluation and development of research. The agreement promotes research studies in biodiversity and sustainable development.

10. Is your country working with other Parties to develop regional, subregional or bioregional mechanisms and networks to support implementation of the Convention? (decision VI/27 A)

a) No	X
b) No, but consultations are under way	
c) Yes, some mechanisms and networks have been established (please provide details below)	
d) Yes, existing mechanisms have been strengthened (please provide details below)	
Further comments on development of regional, subregional or bioregional mechanisms and networks to support implementation of the Convention.	

11. Is your country taking steps to harmonize national policies and programmes, with a view to optimizing policy coherence, synergies and efficiency in the implementation of various multilateral environment agreements (MEAs) and relevant regional initiatives at the national level? (decision VI/20)

a) No	
b) No, but steps are under consideration	
c) Yes, some steps are being taken (please specify below)	X
d) Yes, comprehensive steps are being taken (please specify below)	
Further comments on the harmonization of policies and programmes at the national level.	
<p>Main work on harmonization and synergies in the implementation of various MEAs and relevant national policies and programmes will be tackled through the "National Capacity Self-assessment for Global Environmental Management (NCSA)" project which was initiated by the Ministry of Environment and UNDP in October 2005 with GEF funds.</p> <p>The main objective of the NCSA project is to identify and assess capacity constraints in the implementation of the three United Nations environmental conventions: Convention on Biological Diversity, United Nations Framework on Climate Change and the United Nations Convention on Combating Desertification and to prepare accordingly a National Strategy and Action Plan. In addition, the project will seek to determine the necessary mechanisms at the institutional and functional levels to address these constraints and explore ways of creating a higher degree of linkages and synergies between the conventions.</p> <p>The project will last for 18 months and will execute the following tasks:</p> <ul style="list-style-type: none"> - Explore and develop links and synergies among on-going environmental management and 	

sustainable development projects and programs pertaining to the three UN environmental conventions

- Optimize coherent outputs pertinent to capacity development
- Updating environmental legislation
- Establishment of integrated capacity building systems

Other initiatives related to the alienation of efforts towards effective mainstreaming and coordination among policies are undertaken within the frame of focused projects such as the agrobiodiversity project which has developed a study that proposes the mechanism for the national domestication of international conventions and agreements. The project did a thorough review of international conventions and agreements related to the conservation and sustainable use of agrobiodiversity, that have been ratified by the Lebanese government or that are expected to be ratified in the future. Results have indicated that there is a serious need to legally regulate and coordinate all issues related to plant genetic resource conservation, use and exchange, especially in the light of the concerned agreements and conventions developed in the region and globally.

The relationship and implications of these international conventions on the present national legislation were analyzed and a preliminary proposal for the domestication of the ratified conventions was developed.

Box XLI.

Please elaborate below on the implementation of this strategy specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Cooperation between Lebanon and other parties is mainly ensured through the regional projects related to the conservation and sustainable use of biodiversity in which Lebanon is part. Such cooperation provides concerned parties with necessary capacity building, exchange of knowledge and expertise, technology cooperation and transfer to improve the conservation and sustainable use of biodiversity. The main outcomes of cooperation are:

- Improved coordination of activities thus leading to better results in achieving the targets set by Convention.
 - Promotion of conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing *in-situ* and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in the Beqa'a plain in Lebanon.
 - Exchange of technologies, methodologies and information towards sustainable use of biological diversity. Thanks to the several training sessions, workshops and thematic meetings conducted at the regional level.
 - Improved skills in development of action plans for integrated management due to bilateral and multilateral cooperation.
- Actions undertaken and described in above section contribute to the achievement of Goal 2 of the Strategic Plan of the Convention.
 - National biodiversity action plan foresees some actions under implementation related to cooperation, most of them already implemented.
 - The actions undertaken contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.
 - The cooperation with other Parties, including the exchange of knowledge and experiences is compatible with the actions of the Strategic Plan of the Convention, 2010 Target, Millennium Development Goals, the goals adopted in the *National Strategy on Conservation of Biodiversity* and with other national and sectoral documents.
 - Main constraints are related to lack of effective partnerships.

Article 6 - General measures for conservation and sustainable use

12. Has your country put in place effective national strategies, plans and programmes to provide a national framework for implementing the three objectives of the Convention? (Goal 3.1 of the Strategic Plan)	
a) No	
b) No, but relevant strategies, plans and programmes are under development	
c) Yes, some strategies, plans and programmes are in place (please provide details below)	X
d) Yes, comprehensive strategies, plans and programmes are in place (please provide details below)	
Further comments on the strategies, plans and programmes for implementing the three objectives of the Convention.	
<p>Lebanon has developed its National Biodiversity Strategy and Action Plan in 1998 as an outcome of the Biodiversity Enabling Activity Project funded by the GEF, implemented by the Ministry of Environment and managed by UNDP. The NBSAP included the benefit sharing objective of the CBD but covered mainly the conservation and sustainable use of biodiversity in the following ecosystems and areas: terrestrial ecosystem and natural habitats, marine biodiversity, fresh water biodiversity, agrobiodiversity, in-situ conservation, urban biodiversity, biosafety, international cooperation, strategy implementation and taxonomy.</p> <p>Through additional funds from the GEF, Lebanon has initiated in 2002 the Top- up Biodiversity Enabling Activities Project. The overall objective of the project is to assess national capacity building needs and national priorities related to biodiversity conservation and sustainable use and to review the 1998 Lebanese NBSAP with the aim of developing an addendum for the National Biodiversity Strategy and Action Plan. The addendum of the NBSAP was finalized in September 2005, it has consolidated the objectives, goals and actions set by the Lebanese NBSAP and ensured the necessary alignment with the existing thematic programmes of work and strategic plan of the CBD.</p> <p>In 2002, the Ministry of Environment has developed a five –year National Reforestation Plan and started its implementation. The plan includes the reforestation of approximately 320 hectares/year of Lebanese degraded forest areas distributed in all the Lebanese regions.</p> <p>In 2005, a national coastal zone strategy was elaborated within the frame of the CAMP project. The main thematic activities implemented within CAMP are the following:</p> <ul style="list-style-type: none"> • Integrated Coastal Area Management, which encompasses the following components: <ul style="list-style-type: none"> ◦ Urban management (land-use planning) ◦ Diagnostic analysis of the environment, agriculture and fishery ◦ Cultural heritage ◦ ICAM National Law ◦ ICAM National Strategy ◦ Economic incentives • Integrated Water Resource Management (IWRM) • Tourism and sustainable development • Participatory Programme and SPSA • Marine Conservation Areas • Urban management and sustainable development • Data and information management <p>In March 2002, a project for the elaboration of a National land use planning “Schema directeur d’aménagement du territoire” SDATL was initiated by DAR-IAURIF in collaboration with the CDR. The objectives of this project is to elaborate a national implementation framework for the schema d’aménagement du territoire in order to promote a balanced development opportunity all over the country while allowing optimal exploitation of natural resources and promoting environmental and National Heritage conservation. For that sake a strategy has been elaborated for the implementation of SDATL, This strategy highlighted the tools and the procedures required for the update and implementation of relevant regulations at both the operational and institutional levels in order to achieve goals of a most convenient scenario. In 2004, the National land use planning (“Schema directeur d’aménagement du territoire” SDATL) was elaborated by DAR-IAURIF in collaboration with the MOE and the CDR. However, the SDATL is still pending endorsement by the Lebanon</p> <p>A National Action Programme (NAP) to combat desertification was developed in June 2003 through “the National Action Programme for combating desertification” project executed by MoA as partial fulfillment of Lebanon’s commitment towards the UNCCD. Furthermore, an agricultural strategy and a forest policy are under development by the Ministry.</p>	

The NCSR has developed a science technology innovation policy (STIP) based on inputs and discussions of several researchers and experts from different research or academic institutions. This strategy is a 5-year planning strategy that will be released and adopted in November 2005. It will delineate the scope of work for various scientific domains for the next 5 years as well as mechanisms needed to promote the establishment of an effective pool of scientific research studies done or planned to be done within the scope of the strategy by various researchers in order to elaborate on a sound basis for planning and implementing research; sharing information and expertise and avoiding duplication. In addition, the pursued outcomes from the implementation of this strategy are as stated above mainly related to alienation of efforts deployed in science and to the elaboration of a sound vision in a way that might be defined as easy and effective to mainstream the scientific results into national strategies and policies.

As for on-going plans; a national action plan for protected areas is being developed within the frame of the SISPAM project, it will take into consideration the strategic planning for the conservation, institutional and financial sustainability of the protected areas. A National Environment Action Plan (NEAP) is under development by the MSC_IPP project, it will address the following areas: Water, Air, Land and Land Use, Biodiversity and Natural Heritage, Transport, Energy, Solid Waste, Waste Water, Hazardous and Special Waste.

13. Has your country set measurable targets within its national strategies and action plans? (decisions II/7 and III/9)

a) No	
b) No, measurable targets are still in early stages of development	X
c) No, but measurable targets are in advanced stages of development	
d) Yes, relevant targets are in place (please provide details below)	
e) Yes, reports on implementation of relevant targets available (please provide details below)	

Further comments on targets set within national biodiversity strategies and action plans.

The National Biodiversity Strategy and Action Plan set Goals, objectives, action agenda, targets and indicators for the conservation and sustainable use of biodiversity in the different ecosystems (mainly terrestrial ecosystems and natural habitats, fresh water, marine and agrobiodiversity). However the NBSAP doesn't include measurable targets.

Initiatives in this regard are limited to the scope of some projects for example the reforestation plan at the MOE aiming at increasing the green cover by 20%; or the Climate change study which accounted for projections on status of fauna and flora of Lebanon up to the year 2080. In addition, indicators were set by the LEDO Lebanese Environment & Development Observatory project in 2002 which developed among other indicators five indicators of relevance to biodiversity as follows: forest's protection rate, protected coastal area, protection of specific ecosystems, threatened species and burnt forest area per year. However, these indicators have not progressed further after the ending of the project funds and are not currently in use.

14. Has your country identified priority actions in its national biodiversity strategy and action plan? (decision VI/27 A)

a) No	
b) No, but priority actions are being identified	
c) Yes, priority actions identified (please provide details below)	X

Further comments on priority actions identified in the national biodiversity strategy and action plan.

The NBSAP has set an action agenda for each identified objective. The action agenda included a set of priority actions for the conservation and sustainable use of biodiversity on the immediate, medium and long term.

The Top-up biodiversity Enabling Activity project has identified priorities for capacity building needs for the conservation and sustainable use of biodiversity in Lebanon focusing on sustainable use, the report was finalized in July 2005. Furthermore, the project has developed in 2005 an addendum for the NBSAP which has aligned the objectives and actions of the NBSAP with the 2010 global targets and goals and has identified activities for the implementation of the priority actions set in the NBSAP.

15. Has your country integrated the conservation and sustainable use of biodiversity as well as benefit sharing into relevant sectoral or cross-sectoral plans, programmes and policies? (decision VI/27 A)	
a) No	
b) Yes, in some sectors (please provide details below)	X
c) Yes, in major sectors (please provide details below)	
d) Yes, in all sectors (please provide details below)	
Further information on integration of the conservation and sustainable use of biodiversity and benefit-sharing into relevant sectoral or cross-sectoral plans, programmes and policies.	
<p>Biodiversity was integrated in the different plans, programmes, legislation and policies as follows:</p> <ul style="list-style-type: none"> - Biodiversity components are covered by the EIA studies that are carried out since 1998 for different infrastructure, development and industrial projects. The biodiversity components were integrated in the draft EIA decree developed by the Ministry of Environment and submitted to the Council of Ministers for approval. - Biodiversity issues were covered by the draft SEA decree developed in 2005 by the Ministry of Environment through the SEA project for the implementation of the Strategic Environment Assessment at the national level. Furthermore, the SEA project has developed in 2005 with small grant from IAIA (International Association for Impact Assessment) a national manual and guidelines for the integration of biodiversity into SEA/EIA processes which will be a crucial tool for mainstreaming biodiversity in sectoral decision-making. - Conservation and sustainable use of biodiversity as well as access to biological resources were covered by the law for the protection of Environment (law No. 444 dated 29/7/2002) - Biodiversity components were covered in the Lebanese National Action Programme (NAP) to combat desertification which was developed through "the National Action Programme for combating desertification" project in 2003. - A chapter related to biodiversity and natural heritage will be addressed among other areas in the National Environmental Action Plan "NEAP" that is currently under development by the MSC-IPP project. - A draft law regulating access of the Lebanese biological and genetic materials and benefit sharing arising out of their utilization was developed in 2005 by the Ministry of Environment and will be submitted to the Council of Ministers for approval. - The Agrobiodiversity project (LARI/UNDP/GEF) has produced a final document on policy options at the farm-household, community and national levels that promote sustainable agrobiodiversity conservation and sustainable management of natural resources. These options were based on the socio-economic, ecological and institutional analysis of factors affecting agrobiodiversity. The approach applied for identifying the policy options included assessment of the relevant literature, two in-depth discussions with staff members of the ministries of agriculture and environment, and intensive meetings with representatives of rural communities within the project sites. The proposed policy options that promote sustainable agrobiodiversity conservation and sustainable management of natural resources are classified as follows: <ul style="list-style-type: none"> • Policies for agricultural sector • Policies for management agricultural production • Policies for agricultural extension • Policies for drought mitigation • Policies for soil conservation • Policies for conservation of genetic resources • Policies for management of pasture land • Policies for rehabilitation of forests • Policies for management of water resources • Policies for rural development • Policies for rural and agricultural education • Policies for rural women empowerment • Policies for protected areas • Policies for eco-tourism • Policies for land use management • Policies for development of institutions and institutional set-ups • Policies for development and modernization of legislations and control measures • Policies for maintaining information and database 	

16. Are migratory species and their habitats addressed by your country's national biodiversity strategy or action plan (NBSAP)? (decision VI/20)	
a) Yes	X
b) No	
I) If YES, please briefly describe the extent to which it addresses	
(a) Conservation, sustainable use and/or restoration of migratory species	It is addressed within actions related to the regulation of hunting (medium extent) addressed in the NBSAP
(b) Conservation, sustainable use and/or restoration of migratory species' habitats, including protected areas	Conservation, sustainable use and restoration of natural habitats are addressed in general in the NBSAP and not specifically for migratory birds. These issues are addressed to a large extent within the action agenda related to terrestrial ecosystems and natural habitats and in the action agenda related to in-situ conservation.
(c) Minimizing or eliminating barriers or obstacles to migration	It is addressed within the actions related to the regulation of hunting (medium extent).
(d) Research and monitoring for migratory species	Research and monitoring are addressed in a large extent in the action agenda related to terrestrial ecosystems and natural habitats but it is not addressed specifically for migratory species
(e) Transboundary movement	
<p>In addition to the actions set in the NBSAP in relation to the migratory species and habitats, the following measures were taken in Lebanon:</p> <ul style="list-style-type: none"> - A new law regulating hunting in Lebanon was issued in February 2004 (law No. 580), it states that a specific annual season should be defined for hunting; game birds must be identified; and threatened and rare species must be defined and prohibited for hunting. The related implementation decrees are currently under development. - A three-year project (2001-2004) was implemented by a national NGO (SPNL) on sustainable hunting. The project is funded by Ec-Life and Euronature and is focusing on the elaboration - in coordination with the MOE - of technical data required for the preparation of the implementation decrees of the new hunting law, it includes among other issues the elaboration of the list of rare, endemic and threatened species that must be protected and prohibited for hunting and the list of game birds species. - A regional project on "conservation of soaring migratory birds in the eastern sector of the Africa Eurasia flyway system" is being prepared by Birdlife international through Project development funds (PDF_B) from the GEF and aims at the conservation of the fly way of migratory soaring birds in 11 countries. The national part was prepared by SPNL. The regional project document will be submitted soon by Birdlife to the GEF for funds. The full project will include two phases: the first would address the sectors which have negative impacts on the soaring birds such as hunting, agriculture, power line, and waste management and the second would focus on mainstreaming policies and legislation into the government work plan to mitigate impacts on soaring bird migration. - In 2003-2004 the MNCSR and the LU have conducted a protection programme and a monitoring study along the Lebanese Syrian coast for the Cetacean species with local funds from the LNCSR. In 2004-2005 and with funds from RAC-SPA, a similar programme was launched with MNCSR and LU but within the frame of a regional project including Turkey, Cyprus, Algeria, Morocco, Egypt and Syria and focusing also on local in -situ monitoring of Lebanese marine sites; and in June 2005 the MNCSR was appointed to monitor the presence and migration of Cetacean species all over the Lebanese coast with funds from MONACO. - In 2002-2003, the NCSRS has funded and implemented a project for monitoring the presence of Angeel species that emigrates from the Atlantic (migratory species) into the Lebanese fresh water. - Two agreements under the Convention on Migratory Species (CMS) were ratified by the Government of Lebanon as follows: <ul style="list-style-type: none"> a. The African Eurasian Migratory Waterbirds Agreement AEWA ratified through law No. 412 dated 13/6/2002 b. The Agreement of Cetaceans of the Black sea, Mediterranean Sea and Contiguous 	

II) If NO , please briefly indicate below	
(a) The extent to which your country addresses migratory species at national level	
(b) Cooperation with other Range States since 2000	

Biodiversity and Climate Change

17. Has your country implemented projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use? (decision VII/15)	
a) No	
b) No, but some projects or programs are under development	
c) Yes, some projects have been implemented (please provide details below)	X
Further comments on the projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use.	
<p>The first communication report to the UN Framework Convention on Climate Change (UNFCCC) was submitted by Lebanon in 1999 through a project implemented by MoE and UNDP with funds from the GEF.</p> <p>A study of climate change was prepared by MOE-UNDP in 2001 through another GEF funded project. In this study, expected impacts of climate change, vulnerability and adaptation measures were explored for 1) bioclimatic zones, 2) water resources, 3) agriculture, 4) terrestrial ecosystems, 5) coastal system, 6) marine ecosystem, and 7) socio-economic aspects.</p> <p>Another study of relevance or partly addressing climate change issues has led to the preparation of the National report in 2002, by the Ministry of Agriculture, on the implementation of the UNCCD. It discusses causes and effects of land degradation and formulates for them some mitigation measures.</p> <p>Lebanon issued a decision prohibiting the import of used cupboards which are either disposed of or burnt and accordingly pollute the air (Decree No. 22, issued on 10/11/1993).</p> <p>In addition to that, the Ministry of Environment drew a protocol not specifying the percentage of pollutants in air, water and soil, abiding by international criteria and it was agreed upon in September 1996.</p> <p>For more information see: http://www.MoE.gov.lb</p>	

18. Has your country facilitated coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification? (decision VII/15)	
a) No	
b) No, but relevant mechanisms are under development	
c) Yes, relevant mechanisms are in place (please provide details below)	X
Further comments on the coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the UNFCCC and the UNCCD.	
<p>Besides the ongoing activities under the CBD and the climate change projects that are assisted by UNDP, Lebanon also welcome the outcome of the regional workshops on synergy with other multilateral environmental conventions held region. In addition, the Lebanese coordination dates back to 1998 through the participation of Lebanon in the Climate Change Mitigation in Asia and Financing Mechanisms regional conference held in India.</p> <p>Recognizing the recent encouraging progress in different flora, we believe that it is now time to move from policy-planning/preparation to implementation. The Lebanese paper provided an analysis of the Global warming potential of GHG emissions from Lebanon.</p> <p>In 2001, Lebanon actively contributed to the RICAMARE Workshop on "Socioeconomic Assessments of Climate Change in the Mediterranean: Impacts, Adaptation, and Mitigation Co-Benefits" through two working papers:</p> <p>1-The impacts of climate change on water</p>	

Resources of Lebanon- Eastern Mediterranean.

Mohamad R. KHAWLIE, National Center for Remote Sensing, Beirut, Lebanon

2-Water Resources and climate change in the Middle East

M. EI-FADEL and E. BOU-ZEID, American University of Beirut, Lebanon.

Furthermore, work on harmonization and synergies in the implementation of the Convention on Biological Diversity, United Nations Framework on Climate Change and the United Nations Convention on Combating Desertification and relevant national policies and programmes will be tackled through the "NATIONAL CAPACITY SELF - ASSESSMENT FOR GLOBAL ENVIRONMENTAL MANAGEMENT (NCSA)" project which was initiated by the Ministry of Environment and UNDP in October 2005 with GEF funds.

The main objective of the NCSA project is to identify and assess capacity constraints in the implementation of the three United Nations environmental conventions and to prepare accordingly a National Strategy and Action Plan. In addition, the project will seek to determine the necessary mechanisms at the institutional and functional levels to address these constraints and explore ways of creating a higher degree of linkages and synergies between the conventions.

The project will last for 18 months and will execute the following tasks:

- Explore and develop links and synergies among on-going environmental management and sustainable development projects and programs pertaining to the three UN environmental conventions
- Optimize coherent outputs pertinent to capacity development
- Updating environmental legislation
- Establishment of integrated capacity building systems

Box XLII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Regarding the sections (a) to (e), Lebanon mainly focuses on the issue generated by CO₂, SO₂, O₃ and CFC gases emitted from means of transportation and factories and which have a strong impact on the ozone layer and changing the climate. However, a reduction is expected in the emission of the CO₂ gas as a result of improvement in the generation in the electric generating stations from coal and natural gas to thermal and solar energy. As for the CFC, it is used in cooling and heating equipment as well as in the perfume industry etc. Although Lebanon's share in this problem is lessened, Lebanon realized the importance of issuing and implementing a law in June 1994 prohibiting the import of CFC and draw a program to limit its use. This decision has an impact on two levels:

- Limit the impact of CFC on changing climate as well as the ozone layer.
- Promoting the standard of industry to keep pace with technical development.

Lebanon issued a decision prohibiting the import of used cupboards which are either disposed of or burnt and accordingly pollute the air (Decree No. 22, issued on 10/11/1993).

In addition to that, the Ministry of Environment drew a protocol not specifying the percentage of pollutants in air, water, and soil, abiding by international criteria and it was agreed upon in September 1996.

The preparation of the first National Communication to the UN Framework Convention on Climate Change (UNFCCC) has developed a greenhouse gas inventory identifying the high emissions sectors, paving the way for several operational projects, among which are the Lebanon Cross Sectoral Energy Efficiency and Removal to ESCO Operation (LCECP) project (1999-2004) promoting clean energy technologies, and the Policy Assessment of Electricity Tariffs project (2000) strengthening national policy frameworks.

As for the constraints encountered in the implementation and according to the study that was prepared by MOE-UNDP (2001) mentioned above, challenges relate to the inherent weakness or lack of many and varied components that can be grouped as follows: Concerning management, there is a general lack of well defined sectoral strategies and policies, as well as a very weak integration and coordination between different government agencies, plus the fact that

implementing legislation needs a great push. When it comes to environmental stresses, and what has recently become popular, i.e. using the terms "Hot Spot" and "Sensitive Area", it is observed that under several circumstances there is no distinct differentiation between approaches separating causes of environmental deterioration from processes taking place that further this deterioration, and from results themselves. This is why approaches followed are often partial solutions and, hence, deliverables are short-term only.

The technical aspects are pretty straight forward. There is a notable lack of expertise and skilled manpower, monitoring plans are almost non-existent, standards are not yet ratified and updated-upgraded equipment is lacking.

Existing databases are, to begin with, chaotic, dispersed, inaccurate, and sometimes old and, therefore, can not be used as a reliable source of specific information. If and when good information is there, government agencies may not make them available and even difficult to exchange. The data/information are mostly unstandardized posing, therefore, a problem of making good use of them. (Obviously, all the above constraints must be removed. This is necessary in order to be able to achieve good results of problem analysis. It is of utmost importance to do studies, investigate and evaluate the proper requirements to face a national and international problem as serious as climate change. Lebanon must play a role and contribute to human sustainability).

Article 7 - Identification and monitoring

19.? On Article 7(a), does your country have an ongoing programme to identify components of biological diversity at the genetic, species, ecosystem level?	
a) No	
b) Yes, selected/partial programmes at the genetic, species and/or ecosystem level only (please specify and provide details below)	X
c) Yes, complete programmes at ecosystem level and selected/partial inventories at the genetic and/or species level (please specify and provide details below)	
Further comments on ongoing programmes to identify components of biodiversity at the genetic, species and ecosystem level.	
<p>The main global assessment of the biological diversity in Lebanon was made in 1996 through the Biodiversity Country Study developed by the Ministry of Agriculture in collaboration with UNEP with GEF funds. The Country study is constituted of nine volumes and includes an inventory of fauna and flora in the different ecosystems in Lebanon including terrestrial, fresh water and agricultural habitats.</p> <p>More specific assessment of biodiversity were done to specific sites through international projects, research, thesis and other initiatives as follows:</p> <ul style="list-style-type: none"> - Assessment of fauna and flora in four nature reserves (Al-Shouf Cedars, Horsh Ehden, Palm Islands and Tyre Coast) in addition to one marsh (Ammiq wetland) were conducted within the Protected Areas Project (MoE/UNDP/GEF). The assessment includes an inventory of the species with identification of threatened, rare, endemic and noteworthy species. The first assessment was executed by the NCSR in 1999 and was followed by a second phase in 2004 which was executed by the Lebanese University and covered assessment and monitoring of biodiversity in the five mentioned sites. - In 1999, a study in Rihane Mountain area (located in South Lebanon) was undertaken by a local NGO "GreenLine Association for Conservation" and a private sector "South for Construction" and based on preparatory studies, Rihane area is awaiting its declaration as protected area. In 2002-2004, a more recent study in Rihane Mountain was conducted by a joint group of researchers from the National Council for Scientific Research and the Lebanese University and based on this study, a nomination file was prepared and submitted in 2005 to Unesco Headquarter for its declaration as a Biosphere Reserve. - A preliminary inventory of flora and fauna was conducted in the Yammouneh Nature reserve located in the Bekaa area within the project: "Income generation through sustainable use of natural resources in Yammouneh" funded by the Global Environment Facility (GEF) through PDF-A (Project Development Funds). The project was executed by the Ministry of Environment and the World Bank (GEF implementing agency) in collaboration with the American University of Beirut and a local NGO "GreenLine Association for Conservation" (2001). - Biodiversity surveys in two coastal and marine sites located in South Lebanon (Damour and 	

Naqoura) were achieved within the Coastal Areas Management Programme (CAMP) funded by UNEP/MAP and implemented by the Ministry of Environment. This activity was conducted in 2005 with the aim to carry out the necessary assessment for the declaration of Naqoura marine and coastal area and Damour beach and Damour river basin as Specially Protected areas at national and Mediterranean level under the SPA protocol related to Barcelona Convention.

- The Forest Resource Assessment (FRA), a project funded by the FAO and implemented by the MOA has undertaken inventories and assessment in selected forests' transects all over the country in 2003. The inventories elaborated within the project would be monitored each five years.
- A "National forest and tree inventory and assessment in Lebanon" was executed by the MOA in 2004-2005 with funds from the FAO and consisted of field evaluation of forest status in Lebanon in order to develop a forest map and conduct field verification.
- An encyclopedia of medicinal plants was prepared by Mr. Michel Hayek (researcher in LARI), it includes many volumes containing list of all Lebanese medicinal plants with description of their characteristics, values, benefits and way of use.
- Since 1993 the Lebanese Agricultural Research Institute (LARI) has been carrying out research in relation to the Lebanese medicinal plants. This ongoing operation is of vital importance especially that Lebanon is rich in agrobiodiversity; the fact that might enhance the progress of medicine in the agricultural sector and would allow endangered species find a field of valorization in the food industry sector which will help in preserving them and ensuring a potential new income to the Lebanese industry. Ways should be found to cultivate these species and prove their status as being sustainable resources for the Lebanese economy in a way that would enhance women labor in poor rural areas thus would have a positive impact on rural development. However there are constraints encountered in this field related mainly to the limited cooperation with local and regional scientific institutions working on herbal, medicinal and aromatic plants.

To note that a conceptualization of a strategy of herbal, medicinal and aromatic plants from Lebanon has been elaborated in the Lebanese Agricultural Research Institute (LARI); a strategy that included components of valorizing medicinal and aromatic plants; defining their ecology, classification, cultures, research methodology, utilized techniques, phytochemistry, usage and medical industry based on plants; in addition this strategy has highlighted suggestions for the Lebanese norms, procedures for controlling medicinal and aromatic plants, provedures for improving their production and ensuring quality control, as well as aspects related to trade, economic goals and aspects related to the consumption of medicinal and aromatic plants. However this strategy is still not applied.

A Project on 'the Development of an action plan for integrated management of forests and assessment of insect infestation in cedar forests in the Mediterranean region with particular emphasis on two cedar forests located in the North of Lebanon namely Tannourine-Hadath El-Jebbeh Cedar forest' will be executing surveys and inventories on fauna and flora species in the forests covered by the project. The project is implemented through GEF funds by the Ministry of Environment and UNEP in collaboration with American University of Beirut (2004-2007). Within the frame of the same project, assessment and monitoring of mammals and also of birds predators of the insect *Cephalcia tanrnouinensis* would be conducted.

- Assessment and identification of the coastal flora of Lebanon was carried out within the frame of the Darwin Initiative project on coastal vegetation which is a collaborative project implemented by the American University of Beirut, Royal Botanical Garden Kew (UK) and the University of Reading (1999-2002). An assessment of the status of *Pancratium maritimum* and *Mathiola crassifolia* has been made following the IUCN Red List criteria. Riparian vegetation has been assessed in selected sites along major rivers.
- A project entitled: "Bioprospection: An alternative for sustainable agricultural development" in Lebanon funded by MERCY Corps was launched in 2001 for a 5 years duration. The project was executed by the different faculties at the American University of Beirut in collaboration with Ohio State University (USA) and the University of Toledo (OH, USA). The project main aim was to rely on collaborative research, using biotechnology, to generate new plant-derived commercial products from indigenous Lebanese plants (biodiversity). The purpose is to diversify the agro-industrial portfolio in Lebanon. The project objectives are the following:
 - Identify a short list of key plant species with potential medicinal, bioactive_and/or ornamental value to diversify the national agricultural portfolio and promote sustainable agro-industrial growth in rural communities.
 - Investigate the domestication potential of short listed key plant species.

- Assess the market potentials for plant species with potential medicinal, bioactive, and/or ornamental value.
 - Initiate production of plants with market potential.
 - Investigate the medicinal/agricultural potential of selected plant species.
 - Assessment of Commercial Fish Species would be conducted in terms of species type, quantity, economic value and fishing effort within a collaborative project between the University of Balamand and FAO aiming at evaluating fish species landings in major fishing ports in North Lebanon.
 - Monitoring of Marine Turtles is currently being carried out in the Palm Islands and Tyre Coast Marine Nature Reserves within a collaborative project between a private academic institution (the University of Balamand) and MedWet Coast project. the objectives of the project are to identify turtle species nesting in the reserve, tag female turtles on the Palm Islands, observe nesting behavior, count number of nests per female, count number of eggs per nest per female, count number of hatched eggs, count number of off-spring reaching the sea and develop long-term monitoring program.
 - A Marine Life Collection is under establishment at the Institute of Environmental Studies at Balamand University in order to elaborate on collection of preserved marine specimens and promote awareness campaigns about Mediterranean marine biodiversity.
 - Tracking of mammals is being carried out in Ehden and Al- Chouf Cedars nature reserves within a joint collaborative project between the University of Balamand and the two nature reserves
 - The Ministry of Agriculture in collaboration with AUB has prepared an index of entomo-fauna in Tannourine Cedars forest Nature Reserve
 - Important Birds Areas were identified in Lebanon. In 1994 four sites were declared as IBAs in Lebanon according to global criteria set by Birdlife International. SPNL (a national NGO) has initiated in 2002 an IBA programme in collaboration with BirdLife International/Middle East Division and has identified 40 potential IBAs all over the country. In 2005, A Rocha- Lebanon (NGO) in partnership with SPNL and funds from MAVA foundation has initiated a three-year project to undertake research on the 40 identified potential IBA to ascertain those that fulfill the criteria of IBAs. Many training workshops were organized by SPNL on IBAs: Bird Identification workshops were conducted in cooperation with A Rocha-Lebanon and IBA identification workshop was implemented in cooperation with RSCN -BirdLife partner in Jordan.
 - *A Thousand and One Flowers of Lebanon*. Beirut: Publications of the LEBANESE UNIVERSITY, Natural Sciences Section 22. 309 pp. (Tohmé, G & H, 2002).
 - Identification and assessment of new bird species to Lebanon. *Sandgrouse* (Ramadan-Jaradi et al., 2001, 2002, 2004 and 2005).
 - Floristic assessment of selected communities along Lebanese littoral zone. Lebanon: American University of Beirut. Pp. 88. (Thesis). (Dardas, M. M. 2000).
 - Floristic assessment of selected communities along the Lebanese coastal zone. Lebanon: American University of Beirut. Pp. 103. (Thesis). (Dagher, M. R. 2001).
- In addition to the above mentioned studies, some natural sites were declared as sites of national or international importance due to the importance of the ecosystem that they represent:
- Ammiq marsh was declared Ramsar site as wetland of international importance (No. 978 date 16/04/1999)
 - Raas el Chaqaa was declared Ramsar Site as wetland of international importance (No. 9 date 16/04/1999)
 - Palm Islands nature reserve was declared Ramsar Site as wetland of international importance (No. date /0 /20)
 - Tyre coast nature reserve was declared Ramsar Site as wetland of international importance (No. 980 date 16/04/1999)
 - Four sites were recognized as IBAs sites by Birdlife International in coordination with SPNL (Important Brds Areas: Palm Islands Nature Reserve, Horsh Ehden Nature Reserve, Al-Shouh Cedars Nature Reserve, Ammiq Marsh). All were declared as IBAs by BirdLife international in 1994.
 - One site was inscribed on the World Heritage List as cultural landscape: Qadisha Valley in 1998.
 - Eight sites were declared as nature reserves by national legislation within the frame of the MOE
 - At least fifteen forests located in the mountains were declared as protected forests by ministerial decisions issued by the Ministry of Agriculture
 - The Al-Shouf Cedar Nature Reserve was declared a Biosphere Reserve in June 2005.

Assessment at genetic level:

- Study of the genetic diversity of the cedars forests (initiatives from different researchers and universities)
- Study of the genetic diversity of *prunus* species in Lebanon (LARI)
- Study of the current status of agrobiodiversity and its genetic resources (Agrobiodiversity project.)

A detailed list on biodiversity studies and publications will be posted on the Lebanese Biodiversity Clearing House which is under construction accessible through: <http://www.MoE.gov.lb/>

20.? On Article 7(b), which components of biological diversity identified in accordance with Annex I of the Convention, have ongoing, systematic monitoring programmes?

a) at ecosystem level (please provide percentage based on area covered)	X
b) at species level (please provide number of species per taxonomic group and percentage of total known number of species in each group)	
c) at genetic level (please indicate number and focus of monitoring programmes)	

Further comments on ongoing monitoring programmes at the genetic, species and ecosystem level.

On-going systematic monitoring programmes for biodiversity are being implemented mainly in the nature reserves. Monitoring is being done outside nature reserves within the framework of some activities, programmes and projects but not in a systematic manner for all species:

- Monitoring programmes executed regularly in the nature reserves:

Through the Protected Areas project, the Green Line Association (a local NGO) has performed a GIS Monitoring Program based on the results of the "assessment of biodiversity" studies conducted by the NCSR in five sites: Ammiq marsh and the following nature reserves: Al-Chouf Cedars, Horsh Ehden, Tyre Coast and Palm islands. The Green line Association procured and delivered High Resolution Satellite Imageries in order to provide the project with accurate and up-to-date information on the reserves.

The monitoring program included the preparation of local herbaria for each reserve where the basic techniques and practices for their establishment were given to the management teams through training workshop, weekly follow up visits to the reserves and to some point proceeding with participatory practices to identify flora species at the Post Herbarium at the American University of Beirut. The five sites cover 1.8 % of the Lebanese territory.

To ensure sustainability of the monitoring related activities and a serious follow up on the designed programmes, it was proposed that the techniques and practices must be transferred to the management team with a short and intense follow up by the experts and afterwards the reserves' management teams will take the lead to conduct the biodiversity monitoring inside the reserves.

Monitoring at the level of species is generally implemented by the rangers within the protected areas and only for species that they are able to identify. Seeking assistance from experts is a frequent activity. At the level of habitat and ecosystem, monitoring is undertaken by scientific officers in some protected areas and by rangers alone in others. At this level (ecosystem), the rangers are apparently unable to find the difference between habitat and ecosystem. In addition, they are unable to delimit even an ecosystem within their areas.

In 2004 and through the same project, the Lebanese University has conducted a Biodiversity assessment and monitoring field studies in the five mentioned sites and developed a site specific strategy for monitoring of mammals, birds, amphibians, lizards and plant species, and mapped the components of the biodiversity using GIS technique for monitoring purposes.

- In relation to marine habitats:

The MNCSR has conducted a study all over the Lebanese coast about the geomorphology, geography and ecosystem biocenose and biodiversity of fauna and flora present in defined marine sites and that in 2003 within the frame of SAP - BIO. In 2004, the NCSR has elaborated a strategy whereby defined areas presenting significant biodiversity, turtles and terraces were suggested to be protected. In 2004-2005 marine terraces were protected within the frame of the RAC/SPA regional funded project

At species level:

- There are at least 6 species monitoring subprograms in the country that are compliant with Article 7 (b) of the Convention:

- o Threatened bird species monitoring
- o Migratory bird species monitoring
- o Cetacean species monitoring

- Marine turtle species monitoring
 - Phytoplankton species monitoring
 - Benthos species monitoring
- A monitoring programme for three years (2004-2007) of *Cephalcia tannourensis* and other insects infesting two cedar forests located in the North of Lebanon namely Tannourine-Hadath El-Jebbeh Cedar forest is implemented by the Ministry of Environment and UNEP in collaboration with the American University of Beirut under a GEF Project on the 'Development of an action plan for integrated management of forests and assessment of insect infestation in cedar forests in the Mediterranean region with particular emphasis on the two Lebanese cedar forests mentioned above.
- A collaboration between MedWetCoast Project and Medasset has resulted in a 45-day monitoring of sea turtles along the Southern coast of Lebanon and specifically in Tyre Coast Nature Reserve, Aabassieh, El Mansouri during summer 2004. In summer 2005, the MedWetCoast Project and Medasset carried out the same monitoring along the same area especially in Tyre Coast Nature Reserve, Aabassieh in collaboration with RAC_SPA.
- Through a small tagging scheme, presence and hatching of marine turtles are monitored on daily basis since May 2005 through a joint effort between the University of Balamand, MedWetCoast-Lebanon, Palm Islands Nature Reserve and Tyre Coast Nature Reserve.
- In 2002-2003, the NCSR has funded and implemented a project for monitoring the presence of Angeel species that emigrates from the Atlantic (migratory species) into the Lebanese fresh water.
- In 2003-2004 the MNCSR and the LU have conducted a protection programme and a monitoring study along the Lebanese Syrian coast for the Cetacean species with local funds from the LNCSR. In 2004-2005 and with funds from RACSPA, a similar programme was launched with MNCSR and LU but within the frame of a regional project including Turkey, Cyprus, Algeria, Morocco, Egypt and Syria and focusing also on local in situ monitoring of Lebanese marine sites; and in June 2005 the MNCSR started monitoring the presence and migration of Cetacean species all over the Lebanese coast with funds from MONACO.
- In 2004-2005 a research was conducted by the MNCSR and the LU with funds from CNRS and Syrian University. This research aimed at studying and characterizing all fish species in the Lebanese fresh water especially in Naher el Assi and to assess their biodiversity, population dynamic, sexual cycle and dietary regime especially for the trout arc en ciel.
- In 2005-2006 a study about sponges is planned to be implemented by the MNCSR with co-funds from the LNCSR and a Syrian university. The aim of this study is to assess and define the species of sponges present along the Lebanese-Syrian coast, culture them and study the diseases that affect them. The results would help in using the identified sponges as bioindicators to heavy metal concentration in related marine habitats and on the other hand the success of spongingiculture techniques may promote an income generation source for interested investors.
- In 2005-2006, there is a project funded by the LU and implemented by the MNCSR and LU and aiming at assessing the dietary regime of some fish species all over the Lebanese coast.
- In September 2005 a PhD thesis about nematodes was submitted to the MNCSR and LU within the frame of a project funded by CEDRE and AUF for 3 years (2003-2005). The study aimed at assessing and characterizing nematodes' species, assessing and defining their role as bioindicators in the eastern Mediterranean basin. Further and within the same scope, there is a proposal under preparation by the NCSR and LU aiming at surveying sites all over the Lebanese coast for 2 years.
- A study funded by ACCOBAMS in collaboration with MONACO will be conducted by the MNCSR, the study deals with the dolphins' characterization, observation, presence and their photographic related techniques. For that regard, trainings are being attended and equipments are being requested.

21.? On Article 7(c), does your country have ongoing, systematic monitoring programmes on any of the following key threats to biodiversity?

a) No	
b) Yes, invasive alien species (please provide details below)	
c) Yes, climate change (please provide details below)	
d) Yes, pollution/eutrophication (please provide details below)	
e) Yes, land use change/land degradation (please provide details below)	
f) Yes, overexploitation or unsustainable use (please provide details below)	

Further comments on monitoring programmes on key threats to biodiversity.

Lebanon does not have a systematic monitoring programme on key threats to biodiversity. Monitoring of the threats on biodiversity is done mainly within the protected areas by the

management teams who are present continuously on the sites. The following threats are monitored inside the protected areas: land degradation, overexploitation and unsustainable use, introduction of alien species. It's important to note that all the previous mentioned activities and other human behavior with negative impacts are prohibited inside the nature reserves by law.

The Environment and Development Observatory in Tripoli is currently active in monitoring air pollution, land use, coastal zone management and waste management in northern Lebanon.

22.? On Article 7 (d), does your country have a mechanism to maintain and organize data derived from inventories and monitoring programmes and coordinate information collection and management at the national level?

a) No	
b) No, but some mechanisms or systems are being considered	
c) Yes, some mechanisms or systems are being established	X
d) Yes, some mechanisms or systems are in place (please provide details below)	
e) Yes, a relatively complete system is in place (please provide details below)	

Further information on the coordination of data and information collection and management.

A national mechanism on data and information collection and management is not available in Lebanon at the present. However, data derived from inventories and monitoring programmes in the protected areas are maintained and organized by the Protected Areas Department at MoE which ensure the necessary coordination with stakeholders about all relevant information, data and studies related to the nature reserves.

The Documentary centre of the National Council for Scientific Research (NCSR) hosts two types of databases: 1) the ABHASS database which is a database on research projects sponsored by the NCSR in medicine, agriculture, environment, basic sciences, engineering and technology, economy, and related fields, and 2) the CNRS database which is an on-line catalog on "books, monographs, reports, theses, and research publications" held by the library in the Documentation Centre. However, despite the fact that the NCSR have a mechanism to maintain the data derived specifically from inventories and monitoring programme generated by them, they have no mechanism to organize and coordinate or manage the flow of monitored information.

23.? Does your country use indicators for national-level monitoring of biodiversity? (decision III/10)

a) No	
b) No, but identification of potential indicators is under way (please describe)	
c) Yes, some indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented)	
d) Yes, a relatively complete set of indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented)	

Further comments on the indicators identified and in use.

Within the frame of the Lebanese Environment & Development Observatory (LEDO) project executed from 1998 up to 2001 by the MOE and UNDP with funds from EC-life third countries, various indicators have been developed in a participatory approach among which five indicators are related to biodiversity as follows: forest's protection rate, protected coastal area, protection of specific ecosystems, threatened species and burnt forest area per year. However, these indicators have not progressed further after the ending of the project's funds and are not currently in use and are not currently in use despite the qualified work that was performed and the participatory approach that was used to develop these indicators. These indicators are available on the MoE website through: <http://www.MoE.gov.lb/>.

In 2005, the Top-Up Biodiversity Enabling Activity project has developed Guidelines for designing a monitoring program and indicators for all proposed projects and activities within the context of the National Biodiversity Strategy and Action Plan for Lebanon. These guidelines will be used for the development of biodiversity indicators as information tools that relate field information to policy making and will facilitate the assessment of national performance and the evaluation of progress towards nationally set targets. These guidelines will help the MOE in involving relevant partners in a

manner to ensure short and long term sustainability in monitoring national activities and their impact on biodiversity.

Also in 2005, an addendum to the Lebanon NBSAP was developed through the Top-Up Biodiversity Enabling Activity Project. The addendum includes actions sheets for each proposed action related to biodiversity and the objectives and actions were consolidated within the 2010 biodiversity focal areas, goals and targets in accordance with the CBD strategic plan in particular the framework adopted in decision VII/30. In each action sheet, indicators and monitoring activities were proposed for the suggested action.

However what is still needed is that Lebanon develops its own indicators and move towards a monitoring strategy that is sustainable further than the duration of a project funds. Furthermore, there is a need that the monitoring and indicators proposed for each action in the NBSAP addendum 2005 be developed based on the above mentioned biodiversity indicators and monitoring guidelines.

Box XLIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

- The tasks of identification and monitoring of the state and changes of biodiversity in Lebanon are the routine duties of different research institutions, universities, government agencies (e.g. the NCSR and LARI) and some active NGOs. However, some of them are not systemic monitoring studies and not executed at national level in a systematic manner. Their intensity depends on the funds earmarked for such activities and are carried out on specific sites.
- All activities undertaken are compatible with the actions of the Strategic Plan of the Convention, 2010 Target, Global Strategy for Plant Conservation, Millennium Development Goals, the goals adopted in the *National strategy on conservation of biodiversity* and other national and sectoral documents
- The main challenge, apart from securing permanent source of funds, is the establishment and execution of a systematic monitoring programme for biodiversity and the creation and implementation of an efficient system for collecting, processing and rendering information obtained from the identification and monitoring works.

Decisions on Taxonomy

24. ■ Has your country developed a plan to implement the suggested actions as annexed to decision IV/1? (decision IV/1)	
a) No	x
b) No, but a plan is under development	
c) Yes, a plan is in place (please provide details below)	
d) Yes, reports on implementation available (please provide details below)	
Further information on a plan to implement the suggested actions as annexed to decision IV/1.	
Initiatives in this regard are still limited to some reports and some projects for example the IBSAR center (team of experts at AUB) is in the process of rehabilitating the infrastructure of the Natural History Museum of the AUB and is planning to digitize Post herbarium.	

25. ■ Is your country investing on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections? (decision IV/1)	
a) No	x
b) Yes (please provide details below)	
Further information on investment on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections.	
Initiatives in this regard are still limited especially in the absence of experts and funds for implementing mechanisms and establishing herbaria for such target; however there are some starting initiatives in this regard as for example the IBSAR center at AUB which is planning to relocate and upgrade collection of national, regional and international importance in the Natural History Museum.	

26. ■ Does your country provide training programmes in taxonomy and work to increase its capacity of taxonomic research? (decision IV/1)	
a) No	
b) Yes (please provide details below)	X
Further information on training programmes in taxonomy and efforts to increase the capacity of taxonomic research.	
Training and capacity building in taxonomy have been undertaken within various project activities as follows:	
<ul style="list-style-type: none"> - Within the project "Strengthening of National Capacity and Grassroots in situ Conservation for Sustainable Biodiversity Protection" also recognized as the Protected Areas Project (PAP), capacity building in taxonomy was given by a national NGO (green line) to the management teams in three nature reserves namely Al-shouf Cedars, Horsh Ehden and Palm Islands as follows: techniques for species identification and monitoring were transferred through training workshops; basic techniques and practices required for the establishment and development of local herbaria was provided through training workshops, weekly follow-up visits to the reserves and participatory practices to identify the reserve's plant species at the post herbarium of AUB . - Within the frame of the Darwin Initiative project on coastal vegetation (1999-2002) executed through a collaboration between the American University of Beirut, the Royal Botanical Garden Kew and the University of Reading, assessment and identification of the coastal flora of Lebanon were done and a training workshop was conducted for various stakeholders including management teams of the nature reserves in Lebanon to build their capacities in taxonomic practices, plant identification and techniques needed for herbarium development and preservation and for that sake a methodology module has been also elaborated in 2003. - Through a collaboration between a local NGO the "Association for Forest Development and Conservation" (AFDC), the Hans Seidel German Foundation and the Al-Shouf Cedars Nature reserve, capacity building for local communities was undertaken and for that sake a workshop on initiating practices on plant identification was held in April 2004 and it gathered a wider number of participants from various regions in Lebanon in order to fulfil the needs of PA management teams, interested individuals and eco-guide operator. 	

27. ■ Has your country taken steps to ensure that institutions responsible for biological diversity inventories and taxonomic activities are financially and administratively stable? (decision IV/1)	
a) No	X - Private and academic institutions are seeking international funds to support their activities in the absence of sustainable national funds. As for the administrative work, the MOE and in collaboration with academic institutions and NGOs are working on the elaboration of a comprehensive strategy and mechanisms related to the biodiversity.
b) No, but steps are being considered	
c) Yes, for some institutions	
d) Yes, for all major institutions	

28.*² Is your country collaborating with the existing regional, subregional and global initiatives, partnerships and institutions in carrying out the programme of work, including assessing regional taxonomic needs and identifying regional-level priorities? (decision VI/8)	
a) No	X
b) No, but collaborative programmes are under development	
c) Yes, some collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessments)	
d) Yes, comprehensive collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessment and priority identification)	
Further information on the collaboration your country is carrying out to implement the programme of work for the GTI, including regional needs assessment and priority identification.	

29.* Has your country made an assessment of taxonomic needs and capacities at the national level for the implementation of the Convention? (annex to decision VI/8)	
a) No	
b) Yes, basic assessment made (please provide below a list of needs and	

² The questions marked with * in this section on Taxonomy are similar to some questions contained in the format for a report on the implementation of the programme of work on the Global Taxonomy Initiative. Those countries that have submitted such a report do not need to answer these questions unless they have updated information to provide.

capacities identified)	
c) Yes, thorough assessment made (please provide below a list of needs and capacities identified)	X
Further comments on national assessment of taxonomic needs and capacities.	
<p>A detailed assessment report on national taxonomic needs and priorities was prepared in April 2005 within the GEF Top-up Biodiversity Enabling Activity project executed by MoE and UNDP in collaboration with IBSAR/AUB and was submitted to the CBD Secretariat. The needs identified covered the following issues:</p> <p>a. Knowledge :</p> <ul style="list-style-type: none"> - Training - International guidelines for passport data - Checklist for Lebanon - Adopting international and zoological nomenclature <p>b. Infrastructure:</p> <ul style="list-style-type: none"> - National herbaria - Means for specimens, collection <p>c. Human resources:</p> <ul style="list-style-type: none"> - Specialized taxonomists - Trained collectors/parataxonomists - Curator/Management <p>d. Financial resources:</p> <ul style="list-style-type: none"> - Funds to establish and ensure sustainability of national herbarium - Funds allocated for building and developing capacities 	

30. * Is your country working on regional or global capacity building to support access to, and generation of, taxonomic information in collaboration with other Parties? (annex to decision VI/8)	
a) No	
b) Yes, relevant programmes are under development	
c) Yes, some activities are being undertaken for this purpose (please provide details below)	X
d) Yes, many activities are being undertaken for this purpose (please provide details below)	
Further comments on regional or global capacity-building to support access to, and generation of, taxonomic information in collaboration with other Parties.	
<p>Some initiatives were implemented in this regard but these are limited to specific projects and not to a national programme, these include some bilateral cooperation between research and academic institutions in Lebanon with institutions in other countries, as example the following activities:</p> <ul style="list-style-type: none"> - A collaborative agreement signed in July 2000 between the Lebanese Agriculture Research Institute (LARI) and the Royal Botanic Gardens Kew whereby seeds were collected and stored in the latter institute within the context of the millennium seed bank project. This partnership is one of 15 partnerships of the Millennium Seed Bank (MSB) project and is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology. - A collaborative project implemented by the American University of Beirut, Royal Botanical Garden Kew and the University of Reading aiming at assessing and identifying the coastal flora of Lebanon within the frame of the Darwin Initiative project on coastal vegetation (1999-2002). <p>As for local initiatives related to capacity building in taxonomy, they are either published through books as for examples the studies done by the LNCSR for the whole country, or through illustrated reports as for example the studies done for the protected areas by the LNCSR in 1999 and by the Lebanese University in 2004; or they are within the frame of herbaria as for example the natural museum at AUB planned to be renovated by IBSAR center in 2006, the established herbarium at the LNCSR in 2004 and the herbarium planned to be established at USEK university in 2006.</p>	

31. * Has your country developed taxonomic support for the implementation of the programmes of work under the Convention as called upon in decision VI\8? (annex to decision VI\8)	
a) No	X
b) Yes, for forest biodiversity	
c) Yes, for marine and coastal biodiversity	
d) Yes, for dry and subhumid lands	
e) Yes, for inland waters biodiversity	
f) Yes, for mountain biodiversity	
g) Yes, for protected areas	
h) Yes, for agricultural biodiversity	
i) Yes, for island biodiversity	
Further comments on the development of taxonomic support for the implementation of the programmes of work under the convention	
<p>The main inventory of species at national level was carried out within the Biodiversity Country Study Report prepared in 1996 by the Ministry of Agriculture in collaboration with "UNEP through funds from the GEF. The Biodiversity Country Study is constituted of nine volumes and includes inventories of fauna and flora in various ecosystems in Lebanon: Terrestrial (It covers forest, mountain, dry and sub-humid lands), marine and coastal, fresh water and agriculture biodiversity.</p> <p>Furthermore taxonomic assessment on biodiversity in various ecosystems has been undertaken within different projects activities and details about these initiatives and their outcomes are provided in the report on implementation of the programme of work for the Global Taxonomy Initiative submitted by Lebanon to the CBD Secretariat on April 22, 2005.</p>	

32.* Has your country developed taxonomic support for the implementation of the cross-cutting issues under the Convention as called upon in decision VI/8?	
a) No	
b) Yes, for access and benefit-sharing (please provide details below)	X
c) Yes, for Article 8(j) (please provide details below)	X
d) Yes, for the ecosystem approach (please provide details below)	
e) Yes, for impact assessment, monitoring and indicators (please provide details below)	X
f) Yes, for invasive alien species (please provide details below)	
g) Yes, for others (please provide details below)	
Further comments on the development of taxonomic support for the implementation of the programmes of work under the convention	
<ul style="list-style-type: none"> - Regarding access and benefit sharing and article 8 (j): The MoE has finalized in May 2005 the development of a national draft law regulating access to the Lebanese biological & genetic diversity and benefit sharing arising out of their utilization. The implementation of the regulatory measures stated in the law, once endorsed, will bring support for the inventory and classification of biodiversity and will promote capacity building. The draft law includes as well the protection of the rights of the local communities on the biological diversity present in the areas under their jurisdiction. However, the draft law did not include, intently, indigenous knowledge and intellectual property; these will be developed at a later stage. - Regarding impact assessment: The MoE has included biodiversity component within the EIA and SEA draft decrees that were finalised and submitted to the Council of Ministers for approval. Furthermore, a national manual and guidelines for the integration of biodiversity into SEA/EIA processes was finalized in September 2005. 	

Article 8 - In-situ conservation
[excluding paragraphs (a) to (e), (h) and (j)]

33. ■ On Article 8(i), has your country endeavored to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components?	
a) No	
b) No, but potential measures are being identified	
c) Yes, some measures undertaken (please provide details below)	X
d) Yes, comprehensive measures undertaken (please provide details below)	
<p>Further comments on the measures taken to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components.</p> <p>Within the frame of the existing laws related to biodiversity conservation and establishment of protected areas, what is considered is the protection of biodiversity components while sustainable use is not sufficiently taken into consideration at the larger extent;</p> <p>However, the draft framework law for the establishment and management of nature reserves in Lebanon prepared by MoE addressed the issue of sustainable use since it would divide the nature reserves into two zones : "zone for strict conservation" and "zone for sustainable development" and would allow defining management guidelines for both zones. The management of the "sustainable development area" would reconcile conservation and economic activities while the management of the "strict conservation area" would follow a policy of strict conservation.</p> <p>Other measures, taken to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components, had been integrated as a part of activities within projects such as promotion of studies on species ecology and biology to have scientific bases for proper management and sustainable use of commercially important wild species. Particular stress is made on game animal management, sustainable use of all traditional biological resources in forests and aquatic environment had been an integrated part of the Al_Shouf Cedar Nature Reserve policy. Strict limits on yearly amounts of forest cutting and harvest of commercial marine and fresh water fish species have been introduced in ministerial decrees and laws.</p> <p>In addition there have been some projects initiated to tackle in-situ conservation and sustainable productivity and use such as the Protected Areas project (MoE/UNDP/GEF), the Conservation of Wetlands and Coastal zones in the Mediterranean Project "MedWetCoast" (MoE/UNDP/FFEM), The Integrated Management of Cedar Forests in Lebanon in Cooperation with Other Mediterranean Countries (MoE/AUB/UNEP/GEF), The Stable institutional Framework for Protected Areas Management "SISPAM" (MoE, EC LIFE), the Conservation and Sustainable Use of Dryland Agrobiodiversity project (LARI/UNDP/GEF), the sustainable use of natural resources (private initiatives/IBSAR; 2004-2006) and the Rural Delights project (YMCA/USAID) .</p>	

34. ■ On Article 8(k), has your country developed or maintained the necessary legislation and/or other regulatory provisions for the protection of threatened species and populations?	
a) No	
b) No, but legislation is being developed	
c) Yes, legislation or other measures are in place (please provide details below)	X
<p>Further information on the legislation and/or regulations for the protection of threatened species and populations.</p> <p>Legal measures for the protection of the threatened species were covered by the national legislation related to the protection of ecosystems and natural habitats and by the legislation related to the protection of specific individual species and by the legislation related to sustainable use:</p> <p>1- Protection of habitats:</p> <ul style="list-style-type: none"> - The Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in facto. - Fifteen forests were declared protected explicitly by ministerial decisions issued from the Ministry of Agriculture under the amended Forest Code. - Laws establishing the existing nature reserves: <p>Law 121 92: Establishment of Palm Islands Nature Reserve</p>	

Law 121	92: Establishment of Horsh Ehden Nature Reserve
Law 532	96: Establishment of Al-Shouf Cedars Nature Reserve
Law 708	98: Establishment of Tyre Coast Nature Reserve
Law 11	99: Establishment of Bentaël Nature Reserve
Law 10	99: Establishment of Yammouni Nature Reserve
Law 9	99: Establishment of Tannourine Cedars Nature Reserve

Decision 14/1 95: Establishment of Karm Chbat Nature Reserve

- Ministerial decisions declaring natural sites and river mouths under the protection of the Ministry of Environment.

2- Protection of individual species:

- Ministerial Decision issued by the Ministry of Agriculture regulates the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996)

- Ministerial Decision issued by the Ministry of Agriculture prohibits the import and introduction of all cedar seeds and plants (Decision 108/1, dated 12/9/1995)

- Ministerial Decision issued by the Ministry of Agriculture prohibits the picking and export of ferrula plant & roots (Decision 340/1 dated 1/8/1996)

- Ministerial Decision issued in 1998 by the Ministry of Agriculture regulates the harvesting of oregano and salvia (Decision 177/1)

- Ministerial Decision issued by the Ministry of Agriculture banning the fishing of whales, Monk seals and marine turtles (Decision No. 125/1, 1999)

3- Legislation related to sustainable use:

- Law for the Protection of Environment (law 444/02) has dedicated an entire chapter for the management of natural resources and conservation on biological diversity - specifically articles 47 to 49 which call for the protection and sustainable use of biodiversity, the establishment of nature reserves and for regulating access to genetic resources. Articles 47 states- among other issues- that local population, public and private institutions should collaborate together for the conservation and sustainable use of biodiversity.

- The hunting regulatory law in Lebanon (law no. 580 dated 25/2/2004) modifying and updating the hunting law of 1952 was endorsed in 2004. It promotes the conservation and sustainable use of birds and other terrestrial animal species. The law regulates hunting practices, calls for defining the hunting season, and the permitted time to hunt in the season and for defining the hunting preys and the birds and animals whether wild, resident or migratory which are considered protected all year long, especially threatened and rare species, and for which hunting is prohibited.

- Draft framework law for protected Areas organizes the establishment and management of nature reserves in the country. The draft framework law tackles the issue of sustainable use inside the nature reserves while the existing laws establishing the current protected areas deal only with strict conservation or regulate the activities in the sites and prohibit human activities having adverse effects on the biodiversity within the reserve.

- Biodiversity components were integrated in the draft EIA and SEA decrees developed by MoE. A manual on integration biodiversity into impact assessment processes was developed by the MoE and finalized in September 2005. SEA will be a tool to mainstream environmental sustainability including biodiversity in public planning and decision making. The Protected Areas Project is currently imposing EIA studies as a prerequisite for any infrastructure or development project within any of the protected areas in the country.

- The draft law on access and benefit sharing:

The Ministry of Environment has prepared in collaboration with the "Initiative for Biodiversity Studies in Arid regions" (IBSAR) from the American University of Beirut a draft law on access to genetic resources and benefit sharing. The draft law aims at regulating the access to the Lebanese biological and genetic resources and their components, and the fair and equitable sharing of the benefits arising out of their utilization.

In addition to what has been mentioned, the SISPAM Project executed by the Ministry of Environment, through funding from the Life Third Countries program of the European Commission, in collaboration with the United Nations Development Program (UNDP,) aims at finding the most appropriate and stable management structure that is feasible under Lebanese law and that ensures proper and sustainable management of the protected areas in Lebanon, in consultation, with the relevant stakeholders. The project aims also at ensuring the financial, legal, technical and human capacities sustainability of the proposed structure and the protected areas.

However what need to be addressed in Lebanon is law enforcement and the formulation of more specific laws as for example laws related to the lower flora.

35. ■ On Article 8(I), does your country regulate or manage processes and categories of activities identified under Article 7 as having significant adverse effects on biological diversity.	
a) No	
b) No, but relevant processes and categories of activities being identified	
c) Yes, to a limited extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	
Further comments on the regulation or management of the processes and categories of activities identified by Article 7 as having significant adverse effects on biodiversity.	
<ul style="list-style-type: none"> - The laws establishing the nature reserves regulate the activities in the sites and prohibit human activities having adverse effects on the biodiversity within the reserve. - Management plans were developed to four nature reserves, two of them represent forest ecosystems, one coastal ecosystem and one marine, in addition to a management plan prepared to a privately owned wetland Ramsar site. The management plans emphasize the specific situations, identify the objectives for management the sites and the activities needed for the protection and conservation of the biodiversity in the sites and the sustainable use and proper management of the site. - The hunting law (No.260/2004) regulates the illegal hunting practices that might have adverse effects on the birds' species specifically the endangered, rare, endemic and threatened species. - Efforts deployed to protect forest resources are declared through various legislations for example, the forest code amended in 1996 (law 558 of 24/7/96) lists all conifer species under a protection and thus forbids their cutting and exportation. - The Agrobiodiversity project did a thorough review of international conventions and agreements related to the conservation and sustainable use of Agrobiodiversity, that have been ratified by the Lebanese government or that are expected to be ratified in the future. Results have indicated that there is a serious need to legally regulate and coordinate all issues related to plant genetic resource conservation, use and exchange, especially in the light of the concerned agreements and conventions developed in the region and globally. 	

Box XLIV.

<p>Please elaborate below on the implementation of this article and associated decisions specifically focusing on:</p> <ul style="list-style-type: none"> a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation
<p>Nature Reserves have been actively promoted at the highest levels in the country, consequently and based on the suggestion of the Minister of Environment, the Council of Ministers declared March 10 as the National Day for Protected Areas, this corresponds to the day when first 2 Protected areas were declared by Law.</p> <p>Awareness of the need for <i>in situ</i> protection is common in Lebanon. This is reflected both in the law and In the national, regional and sectoral strategic documents. Due to the policy adopted by the Protected Areas Project, hazards to the biological diversity are reduced, but there is still much to be done outside protected areas or demonstration sites of other projects.</p> <p>Current legal system serves as one of footsteps to reach 2010 Goals.</p> <p>All actions and activities undertaken and described in above section contribute to the achievement of all 4 main goals of the Strategic Plan of the Convention, Millennium Development Goal 7 <i>Ensure environmental sustainability</i>, and with other national and sectoral documents.</p> <p>The communication level between government institutions and landowners in the process of establishment of protected areas and explaining benefits and restrictions is clearly insufficient.</p>

Programme of Work on Protected Areas (Article 8 (a) to (e))

36. Has your country established suitable time bound and measurable national-level protected areas targets and indicators? (decision VII/28)	
a) No (please specify reasons)	
b) No, but relevant work is under way	X
c) Yes, some targets and indicators established (please provide details below)	
d) Yes, comprehensive targets and indicators established (please provide details below)	
Further comments on targets and indicators for protected areas.	
<p>The Department of Protected Areas at MoE has developed in 2005 a workplan for the protected areas which included the following goal: to develop a systematic and strategic sustainable plan for nature reserves in Lebanon. This goal include six targets as follows: a strategic conservation planning for protected areas; capacity building for PA management; secure funding of PA management; legal and institutional framework for PA management; public awareness on PA and effective management of PA.</p> <p>In this regard, and within the frame of the MOE, The SISPAM project is working on the Preparation of a Protected Areas Action Plan tackling administrative, financial and legal issues as well as biodiversity conservation concerns. This action plan will include measurables targets and indicators, will adapt international standards/criteria for the classification and categorization of PA.</p>	

37. Has your country taken action to establish or expand protected areas in any large or relatively unfragmented natural area or areas under high threat, including securing threatened species? (decision VII/28)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, limited actions taken (please provide details below)	X
d) Yes, significant actions taken (please provide details below)	
Further comments on actions taken to establish or expand protected areas.	
<p>The Ministry of Environment is continuously receiving requests from local authorities, local communities, NGOs or scientists for establishing new protected areas in specific sites. The MoE based on these applications on one hand and through its own initiatives on the other, is conducting the necessary procedures for the declaration of new sites as protected areas if they fit the required criteria.</p> <p>Recently, the MoE has classified three sites as natural sites under the protection of the Ministry of Environment through Ministerial Decisions issued from the Minister of Environment (March, 2002). According to those decisions, the mentioned sites will be subject to necessary scientific studies for their classification as protected areas by law. Also there are two sites Rihane and Al_Shouf Nature Reserve proposed to be nominated as Biosphere Reserve through proper channels for the consideration of the UNESCO Headquarter in April 2005. One of them is already approved as Biosphere Reserve (Al_Shouf Nature Reserve) in June 2005 whilst the other (Rihane) will be reviewed in 2006.</p> <p>On the other hand, there has been a land use master plan elaborated in 2004 funded by the CDR and IAURIF for 3 years in collaboration with the MOE which aimed at delimitating 6 regional parks according to cultural or environmental criteria and the proposed parks were identified on the basis of corridors as such: Ehdn-cedars/ Tannourine-Kartaba/ Beirut river-Monteverde-Lamartine/ Chouf-Jezzine-Bkessine/Jabal Cheikh/Rachaya. Also there has been one national park proposed in Qornet Sawda (The highest mountain top in Lebanon). However the declaration of these parks is awaiting a decree.</p> <p>Furthermore, there are some initiatives taken by private NGOs to protect important sites including important biodiversity species or threatened species:</p> <p>The BirdLife International/Middle East Division and in cooperation with SPNL (national NGO and partner of Birdlife International) have launched the Important Bird Areas (IBAs) programme. Work on IBAs has started in 2002 and there have been four IBAs declared in Lebanon in 1994 and 40 potential IBAs identified all over the country according to global criteria set by Birdlife International. This activity will be continued for another three-years programme to update and promote Lebanese Important Bird Areas and to conduct further studies and research on potential sites.</p>	

On the other hand, the SPNL has initiated in 2004 the Hima system in Lebanon, Two sites one in Ibl-Saki/Marjeyoun (South Lebanon) and the other in Kfarzabad wetland (Bekaa area) were declared as Hima sites within a project executed in partnership with local municipalities and Mercy Corps and USAID. The Hima sites are declared according to international criteria related to the wealth of biodiversity and the cultural heritage.

The Hima is a traditional protected area system that aims at the sustainable use of natural resources by and for the local communities surrounding the Hima, indirectly benefiting the conservation of biodiversity as well as the natural and cultural heritage of the area. Governance of Himas was initiated long time ago and was handled solely by tribal chiefs in Arabia, to be handed over to religious leaders with Islam to ensure benefits to the underprivileged people in communities and within tribes. This has later been transferred to the municipalities and other democratically elected bodies in countries of the Near East, such as Lebanon, to ensure equity and the fair use of resources while sustaining the natural resources of the Hima.

What needs to be addressed is a proactive approach in terms of assessing gaps in relation to the protection of biodiversity at the national level and in terms of establishing further protected areas.

38. Has your country taken any action to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas? (decision VII/28)

- | | |
|--|--|
| a) No | |
| b) Not applicable | |
| c) No, but relevant actions are being considered | |
| d) Yes, limited actions taken (please provide details below) | |
| e) Yes, significant actions taken (please provide details below) X | |

Further comments on actions taken to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas.

In total there are eight protected nature reserves in Lebanon, seven of which are declared by the Parliament and one by ministerial decision issued by the Minister of Environment.

Two of the eight nature reserves represent coastal and marine ecosystems (Tyre Coast Nature Reserve and Palm Islands Nature Reserves).

The Ministry of Environment is addressing biodiversity in-situ conservation in coastal, marine and inland water ecosystems within the project on "Conservation of Wetlands and Coastal zones in the Mediterranean MedWetCoast (1999-2005). The project covered the conservation and management of two main sites: The Tyre Coast Nature Reserve and the Wetland of Aammiq.

Furthermore, Lebanon has addressed the coastal and marine ecosystems through the implementation of "Coastal Areas Management Programme" CAMP project from 2002 till 2004. The CAMP project includes within its activities, a thematic activity related to the "Marine Conservation areas" which consist of the elaboration of the technical, administrative and legal profile for the declaration of two marine sites located in South of Lebanon (Naqoura beach and Damour River Basin) as specially protected areas at national and Mediterranean levels. This thematic activity is currently under implementation by a local NGO "Amwaj Al Bia'a" on behalf of the Ministry of Environment.

The Ministry of Environment has declared many rivers as natural sites under its protection through ministerial decisions issued by the Minister of Environment.

Four Lebanese sites were declared as Ramsar sites through initiatives undertaken by the Ministry of Environment.

39. Has your country identified and implemented practical steps for improving the integration of protected areas into broader land and seascapes, including policy, planning and other measures? (decision VII/28)

- | | |
|--|---|
| a) No | |
| b) No, but some programmes are under development | |
| c) Yes, some steps identified and implemented (please provide details below) | X |
| d) Yes, many steps identified and implemented (please provide details below) | |

Further comments on practical steps for improving integration of protected areas into broader land and seascapes, including policy, planning and other measures.

Protected areas in Lebanon are continuously increasing, from three in 1996 to ten in 2002, with continuous requests submitted to the Ministry of Environment (MoE) for the declaration of new sites. However, many difficulties are being encountered mainly the lengthy bureaucratic procedures for the establishment and management of protected areas at all levels specially that there is a large set of stakeholders involved in protected areas management besides the Ministry of Environment which is the main institution responsible for the establishment and management of nature reserves; this is lengthening the procedures and slowing reaction time.

According to those needs, the MoE with funds from the EC-Life Third Countries and in collaboration with UNDP-Lebanon has started in February 2004 the implementation of a project aiming at identifying and institutionalizing proper and approved structure for the management of protected areas at both the macro and micro levels. The legal, structural, financial and human aspects will be tackled to end – up with a comprehensive and integrated management model. The project is entitled “Stable Institutional Structure for Protected Areas Management: “(SISPAM” project)

In addition and within the frame of the PAP and MedWetCoast projects executed by MOE three management plans were developed in 2002 for Palm Islands Nature Reserve, Horsh Ehden Nature Reserve and Al_Shouf Nature Reserve respectively, and two draft management plans elaborated in 2005 for Aammiq Wetland and Tyre Coast Nature Reserve.

Furthermore, The Ministry of Environment has developed a draft framework law for the establishment and management of nature reserves in Lebanon. The framework law will organize the establishment of nature reserves on public as well as on private lands and will allow the nature reserves to charge entrance fees. The framework law will divide the nature reserves into two zones :“zone for strict conservation” and “zone for sustainable development” and will simplify the process by which new nature reserves are established to a decree issued by the Council of Ministers instead of the issuance of a law (the existing nature reserves are established by law). The decree would enable defining the boundaries of the “strict conservation zone” and the “sustainable development zone” and would allow defining management guidelines for both zones. The management of the “sustainable development area” would reconcile conservation and economic activities while the management of the “strict conservation area” would follow a policy of strict conservation.

40. Is your country applying environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas? (decision VII/28)

a) No	
b) No, but relevant EIA guidelines are under development	
c) Yes, EIA guidelines are applied to some projects or plans (please provide details below)	X
d) Yes, EIA guidelines are applied to all relevant projects or plans (please provide details below)	

Further comments on application of environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas.

Environmental Impact Assessment (EIA) and Strategic Impact Assessment (SEA) concepts were endorsed through the Law for the Protection of the Environment (no 444/02) in particular articles 21 and 22 which states that “any programme, study, investment or planning proposal covering a Lebanese region or an entire production sector [and] likely to affect the environment due to their size, nature, impacts, or types of activities” will have to be assessed for potential environmental impacts prior approval. This also applies to “any amendment, addition, expansion or review” of such proposals.

Based on the law 444, draft EIA and SEA decrees were prepared by the Ministry of Environment and submitted to the Council of Ministers for endorsement.

The draft EIA decree includes details related to various steps of EIA system (screening, scoping, review and monitoring). The draft decree states that all major development, infrastructure and industrial projects will have to undergo an EIA study including effects on biodiversity, in order to promote conservation activities before receiving approval.

Although the EIA decree is not endorsed yet, almost 100 EIAs studies have been conducted over the past five years, mostly for wastewater treatments systems, soil waste, marinas, quarries, building centers, and hospital waste treatment. In the first stages, the sections related to biodiversity

assessments relied mainly on literature review and limited field work and didn't include the meaningful assessment of baseline biodiversity components and proposition of viable alternatives or mitigation measures.

When the proposed project is located in the surrounding of a protected area, the required EIA study must focus on the project's effect on protected areas. Among the EIA studies submitted to MoE during the last past years, 5 were related to projects close to nature reserves.

Regarding to SEA studies, they are still at preliminary stages and are currently conducted mainly through student projects and thesis. The first SEA study was recently conducted for the coastal area of Jounieh and submitted to MoE, it aims at reviewing the seafront of the city and its urban planning. According to the SEA draft decree which was developed by MoE through the SEA project (EC-life/UNDP), initiatives related to water and wastewater management, energy, transport, solid waste management, land use planning as well as industrial and agricultural development would be potentially concerned by the SEA process. The only exceptions are plans and programmes pertaining to national defense and civil security, emergency response to natural disasters or any other *force majeure*. Implementing this decree once endorsed would *de facto* lead to the minimization of impacts of plans and policies on biodiversity and protected areas.

In addition to the draft decrees and based on the existing gaps especially in relation to the need to fully integrate biodiversity components into impact assessment processes, the SEA project secured a small grant from the International Association for impact assessment (IAIA) to develop practical guidelines, in the form of a manual, for the integration of biodiversity in SEA and EIA. The manual was finalized in September 2005 and will serve as reference to evaluate effect of plans on biodiversity and protected areas.

Another gap to be addressed is the need to enforce EIA and SEA in the pre-feasibility studies of the intended projects so that the stakeholders would manage for additional costs related to the mitigation of the project on the surrounding resources.

Besides the time consuming procedures and the lack of monitoring on the status of the sites under study is impacting negatively on the effectiveness of EIA.

The DGUP and MoE are collaborating together to assess the need for the development of EIA studies for relevant projects; Once the DGUP receives a request to issue a license for construction or development projects neighboring to protected areas, the DGUP asks for sharing with MOE the request so that MoE will assess the necessity for conducting an EIA for the project.

41. Has your country identified legislative and institutional gaps and barriers that impede effective establishment and management of protected areas? (decision VII/28)

a) No

b) No, but relevant work is under way

c) Yes, some gaps and barriers identified (please provide details below)

d) Yes, many gaps and barriers identified (please provide details below) x

Further comments on identification of legislative and institutional gaps and barriers that impede effective establishment and management of protected areas.

Protected areas in Lebanon are continuously increasing, from three in 1996 to ten in 2002, with continuous requests submitted to the Ministry of Environment (MoE) for the declaration of new sites. The Ministry of Environment is the main institution responsible for the establishment and management of nature reserves, but there are many stakeholders involved in protected areas' management; this includes the Ministry of Finance, the Ministry of Water Resources, the Ministry of Municipalities and Rural Affairs, municipalities, non-governmental organizations, scientific institutions and the local communities. This large set of stakeholders in protected sites is lengthening the procedures and slowing reaction time. Financial government contributions to the protected areas need to be redefined annually and the allocation procedure entails lengthy bureaucratic procedures. Besides, there is the land ownership issue that needs to be addressed as well and the lack of expertise in various knowledge fields especially in relation to setting conservation priorities, following upon monitoring and on recommendations. Moreover, within the frame of the Protected Areas Project, many gaps and barriers were identified.

The following is a list of the main institutional and legislative gaps and barriers impeding the effective establishment and management of protected areas:

- Imbalance between personnel resources at the Ministry of Environment and increasing number of protected areas,
- Insufficient personnel resources among management teams,
- Absence of clear TORs for the members of the Government Appointed Committees "GAC"

responsible for the management of the nature reserves

- Overlapping responsibilities of different authorities over some protected areas,
- Unstable management teams and loss of expertise due either to unstable financing system or to better job opportunities elsewhere,
- Inflexibility of the early existing laws declaring the existing nature reserves and which focused on strict conservation (no camping and other human activities, no entrance fees, no regulations for buffer zones, no regulations for establishment of nature reserves on private lands etc.),
- Insufficient expertise in integrated management of protected areas which ensures sustainable management,
- Heavy loads over management teams (all the PA management is undertaken by the MT: Conservation, monitoring, awareness, social development, visitor management, fund raising, capacity development, research...).
- Weak involvement of specialized NGOs and institutions (universities, research institutions, private sectors, municipalities, etc.),
- Unsustainable capacity development system,
- Political conflict affecting the management of Pas,
- Absence of general guidelines or Action Plans for protected areas management.
- Absence of information transfer mechanism from old to new GACs.

According to those identified gaps and obstacles, the MoE with funds from the EC-Life Third Countries and in collaboration with UNDP_ Lebanon has started in February 2004 the implementation of a project aiming at identifying and institutionalizing proper and approved structure for the management of protected areas at both the macro and micro levels. The legal, structural, financial and human aspects will be tackled to end – up with a comprehensive and integrated management model. The project is entitled “Stable Institutional Structure for Protected Areas Management: “(SISPAM” project). Whereas the SISPAM rationale relies on the fact of addressing the already identified gaps, another project would be shaped in this regard for new gap identification.

Moreover, the draft framework law on protected areas developed by the Ministry of Environment addresses the current gaps related to the absence of regulations for the establishment of protected areas on private lands and the absence of rules allowing the reserves’ committees to collect entrance fees as well as barriers related to the current nature of protection which is the “strict conservation” and the lengthy process by which the establishment of protected areas is currently abiding which is the issuance of a law by the parliament.

Accordingly, the framework law will organize the establishment of nature reserves on public as well as on private lands and will allow the nature reserves to charge entrance fees. The framework law will divide the nature reserves into two zones :“zone for strict conservation” and “zone for sustainable development” and will simplify the process by which new nature reserves are established to a decree issued by the Council of Ministers instead of the issuance of a law (the existing nature reserves are established by law). The decree should define the boundaries of the “strict conservation zone” and the “sustainable development zone” and should define management guidelines for both zones. The management of the “sustainable development area” should reconcile conservation and economic activities while the management of the “strict conservation area” should follow a policy of strict conservation.

42. Has your country undertaken national protected-area capacity needs assessments and established capacity building programmes? (decision VII/28)

a) No	
b) No, but assessments are under way	
c) Yes, a basic assessment undertaken and some programmes established (please provide details below)	x
d) Yes, a thorough assessment undertaken and comprehensive programmes established (please provide details below)	

Further comments on protected-area capacity needs assessment and establishment of capacity building programmes.

-The protected areas project launched since 1996 has contributed tremendously to the assessment of the capacity building needs and conducted for this purpose many workshops to satisfy the needs of the protected areas system, especially about conservation-restoration-rehabilitation, management plans development, collaborative management, eco-tourism, fundraising mechanisms, information interpretation, assessment and monitoring, etc.

-The MedWet coast and within the frame of its objectives has addressed the “strengthening of

national capacities" through various activities based on assessment of needs for improving the skills in the protected areas and wetlands. These activities addressed the promotion of organic farming, eco-guiding and ethics, site diagnosis, monitoring and evaluation, wise use of natural resources, poverty alleviation, etc.

-The Sispam ongoing-project is addressing gaps and opportunities in relation to the management of PA and as such, capacities and experts are being defined:

In 2005, a round table meeting was held at the Ministry of Environment, after a short presentation introducing the SISPAM Project, to assess with managers of protected areas the capacity needs for sustainable management of protected areas. The most important capacity problems in the field of biodiversity identified by the participants were that compensation and incentive programs for landowners within specially protected nature territories are not fully operational and / or sufficiently understood by key stakeholders, and the management mechanism/system is inadequate, particularly with respect to the integration of existing local authorities.

Some work on both the assessment of need and capacity and on the associated plans of activities is currently in progress in connection with the implementation of the SISPAM Project. These tasks are the following:

- Determine the most accepted management structure
- Determine the capacity needs of the management structure
- Determine financing mechanisms for the structure
- Implement key components of the structure
- Fine tune and adjust the structure after implementation

According to the above-mentioned component, the SISPAM project requires:

1. An assessment of the resources and capacity needed to support the integrated management of the protected areas in Lebanon
2. Survey about the national resources and capacities available for the integrated management of protected areas in Lebanon.
3. Cross analyze the required vs. available resources and capacities
4. Design a Capacity Building-Strategy to fill the gaps
5. Calculate the baseline costs of implementing the plan and addressing capacity needs.

On the other hand, several NGOs have undertaken needs' assessment in relation to various topics of biodiversity (AFDC on forest inventory, awareness, fire combating; Arz-Chouf on intermediate non wood forest products and artcrafts; Friends of Horsh Ehden on assessment of biodiversity and ecotourism; Amwaj Al Bia'a on birdwatching, organic farming and sea turtle monitoring; Environment Protection Committee on fishermen awareness, control of illegal fishing, eco-tourism, ... to name a few.

In addition to the reforestation activities, AFDC organizes and implements yearly different capacity building activities (workshops, seminars, training courses, etc) targeting the local community at large at the Mediterranean Forest Development and Conservation Center of Lebanon (MFDCL). The capacity building activities deal with the issues of Forest fire fighting and prevention.

43. Is your country implementing country-level sustainable financing plans that support national systems of protected areas? (decision VII/28)

a) No	
b) No, but relevant plan is under development	x
c) Yes, relevant plan is in place (please provide details below)	
d) Yes, relevant plan is being implemented (please provide details below)	

Further comments on implementation of country-level sustainable financing plans that support national systems of protected areas.

Since 1997, the MOE has been assisting the protected areas in both technical and financial resources on annual basis; as for the time being, the MOE is working on:

-The elaboration of business plans for each of the PA (Costing of management plans in Tyre and Aammiq; business plan in Tyre; Arz Chouf, Horch Ehden and Palm Islands Nature Reserves for identifying income generating activities so that sustainable financial resources would be allocated from local sources such as communities, municipalities and private sector;

-The elaborating a sustainable structure and framework for management of PA through the SISPAM project;

-Issuance of a Draft law for PA that would address the entry fees as potential source of income for PA.

However, and despite the plans and the collaborations done, reliance is still mainly on international donors and not on local fund raising

44. Is your country implementing appropriate methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance? (decision VII/28)

a) No	
b) No, but relevant methods, standards, criteria and indicators are under development	x
c) Yes, some national methods, standards, criteria and indicators developed and in use (please provide details below)	
d) Yes, some national methods, standards, criteria and indicators developed and in use and some international methods, standards, criteria and indicators in use (please provide details below)	

Further comments on methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance.

In relation to the evaluation of methods standards criteria and indicators related to the PA management and governance it is being limited to project as for example in the MedWetCoast project a terminal evaluation tracking tool was carried out by WWF about the management of the Palm Island, Ehden, Chouf, Aammiq and Tyre. Despite that, what needs to be addressed are enforcement of laws, elaboration and implementation of tangible policies, alienation of research among ministries and academic institutions and the elaboration of an evaluation system to be used repetitively in Lebanon.

Box XLV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

- The system of protected areas has a long and good tradition in Lebanon. According to the legal system currently in force it includes nature reserves, significant landscape areas or natural, scenic, cultural and river mouths sites, protected forest, and Hima areas. The latter are managed and protected by local community for common benefits. Up to date, 8 nature reserves and several protected forests and landscape sites have been classified.
- All the nature reserves established by laws cover 1.8% of the Lebanese territory.
- Most of the valuable ecosystems have been included into the national system of protected areas. Further extension of the system should include, among others, marine areas.
- All the measures taken are conform to goals 2 and 3 of the Strategic Plan of the Convention, 2010 Target, and Millennium development Goals as well as the targets adopted in the *National Strategy for conservation and sustainable use of biological diversity* and in other national and sectoral documents.

The main challenge is creating favourable climate for general public approval of nature conservation and convincing local communities that protected areas may and should be an important element of regional social and economic development. Changes in awareness of those issues should be supported by the system of incentives (e.g., tax exempts). In general, methods for conflict resolving should be further searched for, in particular where there are discrepant targets adopted in the policy. For instance, in Lebanon targets of road network development, hydrotechnical development of rivers, and development of mass tourism are in conflict with the targets of biological diversity conservation. Optimization of the protected areas system to ensure sufficient protection for threatened species and habitats is desired to designate Lebanese protected areas as part of international networks of protected areas. Furthermore, what is needed is a sustainable financing plan for all the nature reserves

to ensure auto-sustainability.

Article 8(h) - Alien species

45. Has your country identified alien species introduced into its territory and established a system for tracking the introduction of alien species?

a) No	
b) Yes, some alien species identified but a tracking system not yet established	X
c) Yes, some alien species identified and tracking system in place	
d) Yes, alien species of major concern identified and tracking system in place	

Further information on the identification of alien species introduced into its territory and establishment of a system for tracking the introduction of alien species.

Very limited work was done in Lebanon to identify or control or track the introduction of alien species in Lebanon. Invasive Alien Species (IAS) are not yet considered a major threat to biodiversity in the country nor recognized as key element of strategy development.

Within the protected areas project, plans are in place and operating in respect of some (but not all, because of limited resources) of the invasive species threatening endemic species in Palm Islands Nature Reserve, for example eradication of introduced rabbits threatening endemic plants. Otherwise, the work on alien species was carried out by some scientists for research purpose or by students within the context of their thesis project.

Only few species of major concern to some scientists have been studied. These include three algae species, one of which is considered to be a threat to our indigenous marine species: *Stypopodium zonale*. There aren't, however, any scientific publications on the risk assessment of this species in Lebanon even though it is considered by some specialists to be a real threat.

The other species also mentioned as alien are the birds "*Alectoris graeca*" and "*Alectoris rufa*". These species are being introduced to Lebanon for hunting purposes and released into the wild. Both species are considered as an actual threat to the native bird "*Alectoris chukar*".

An Indian Ring-neck Parakeet population was found established at the American University of Beirut and another was found at the feet of Hermon mountain. These birds are apparently escaped from captivity and forage for food in the agricultural crops and orchards where they locally cause damage.

Within the Agrobiodiversity project, monitoring survey has been done on the intensity of factors of degradation on the selected sites and the following were identified as key threats: drought, overgrazing, introduction of new alien species and land overuse.

Within the frame of the Darwin project, a quick survey of nurseries was carried out to assess the number of imported Mediterranean invasive species and the number of traded invasive species.

A detailed study has also been conducted on one insect species "*Liriomyza huidobrensis*" which was introduced to Lebanon in 1990 through the introduction of exotic ornamental plants to the country. This insect is known to cause major economic damage on many ornamental plants as well as many crops, and is considered to be invasive in other surrounding countries namely Syria and Israel. No appropriate measures have been taken in Lebanon to stop its introduction or to control it.

The National Marine Center in Lebanon is associated with CIEM Atlas of exotic species which provides a comprehensive survey on recent marine "immigrants" in the Mediterranean. CIEM covers various aspects of the marine science such as geo-physical, chemical and biological processes around six committees including living resources and marine ecosystem and coastal ecology.

Several fish species were introduced in the past by the MOA. These are *Salmo trutta* introduced since 1962, *Salmo irrideus* since 1958 and *Salmo fontinalis* since 1964. These species are thought to be naturalized and not to pose any threat to the ecosystem or other native fish species.

Also, few types of plankton have been identified as alien species as well as some algae and some benthos. Examples of studies related to identification and monitoring of alien species are as follow:

- Distribution size and abundance of the blue-spotted cornetfish, a recent invader of the eastern Mediterranean Sea (Bariche, M.)
- Diet of *Fistularia commersonii* an alien species (*Teleostei, Fistulariidae*), in Lebanese coastal waters (Bariche, M.)
- Cymothoid fauna of Lebanon and the eastern Mediterranean Sea (Bariche, M.)
- Reproductive biology of *Fistularia commersonii* (*Teleostei, Fistulariidae*) a newly introduced fish to the Mediterranean Sea (Bariche, M.)
- Assessment of the status and conservation requirements of the minnows (*Teleostei:*

46. ■ Has your country assessed the risks posed to ecosystems, habitats or species by the introduction of these alien species?

a) No	X
b) Yes, but only for some alien species of concern (please provide details below)	
c) Yes, for most alien species (please provide details below)	

Further information on the assessment of the risks posed to ecosystems, habitats or species by the introduction of these alien species.

Measures adopted are limited to the identification of species but there is no real effort deployed for assessment of risks posed to ecosystems, habitats or species by the introduction of alien species; also there are no measures taken for inducing prevention or treatment if invasion happens. All research related to this field are limited to scientific publication. As such, obtaining a comprehensive picture of the threats is difficult as pieces of information on alien species are subsequently dispersed. However, it is planned under the Darwin initiative project that Kew, LARI and AUB are to be involved in specific monitoring of key invasive alien species on a case by case basis.

In fact, there have been no guidelines and no assessments of threats (pathological or invasiveness or others) done on the presence of species. However and in relation to invasive species 80 species of fish have been identified as being driven from the Suez Canal to the Lebanese shore and tagged by the national marine center as alien species. For example, *Fistularia commersonii* has been identified as a threatening fish species as it is a carnivorous fish that eats eggs and other fish.

Invasive species in forestry apparently do not cause serious problems probably because their occurrence is badly known. However, Assessment of the threat of alien species is foreseen in the addendum of the NBSAP. Whatsoever, Lebanon does not have a systematic monitoring programme on key threats to biodiversity. Monitoring of the threats on biodiversity is done mainly within the protected areas by the management teams who are present continuously on the sites. The following threats are monitored inside the protected areas: land degradation, overexploitation and unsustainable use, introduction of alien species. It's important to note that all the previous mentioned activities and other human behavior with negative impacts are prohibited inside the nature reserves by law.

47. ■ Has your country undertaken measures to prevent the introduction of, control or eradicate, those alien species which threaten ecosystems, habitats or species?

a) No	
b) No, but potential measures are under consideration	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to prevent the introduction of, control or eradicate those alien species that threaten ecosystems, habitats or species.

Only one Ministerial decision was issued by the Minister of Agriculture in 12 September 1995 to stop the introduction of alien species and this decision (Dec. 108/1) specifically prohibits the import and introduction of any Cedar seeds, seedlings and plants. The law was put forth in response to the uncontrolled introduction of trees from the *Cedrus* genus through the ornamental industry.

Laws establishing nature reserves prohibit the introduction of any alien species to the reserve and the developed management plans the eradication of those alien species that may threaten ecosystems, habitats or species.

The Ministry of Environment has changed its policy towards the National Council for hunting by setting new terms of references implicating that the council will not benefit from the ministry's financial contribution if it releases into the wild introduced species for hunting purposes.

48. ■ In dealing with the issue of invasive species, has your country developed, or involved itself in, mechanisms for international cooperation, including the exchange of best practices? (decision V/8)

a) No	
b) Yes, bilateral cooperation	

c) Yes, regional and/or subregional cooperation	
d) Yes, multilateral cooperation to some extent	X - With Island Conservation Center for Ocean Health, 100 Shaffer Rd., University of California, Santa Cruz, CA 95060 USA and participants to the 2001 Conference on Islands (website http://www.issg.org/ConfProcConts.html) about eradication of AIS.

49. ■ Is your country using the ecosystem approach and precautionary and bio-geographical approaches as appropriate in its work on alien invasive species? (decision V/8)	
a) No	
b) Yes (please provide details below)	X
Further comments on the use of the ecosystem approach and precautionary and bio-geographical approaches in work on alien invasive species.	
Ecosystem approach tends to be taken in a decentralized manner at a low administration level. That makes it possible to take into account local needs and applying solutions including the needs for correct functions of whole ecosystems, mainly in protected areas.	
The new EIA draft decree recommends applying the precautionary principle when importing species which could pose a serious threat to native natural diversity in case of their release mainly in protected areas and their surroundings. However, so far no principles of recognizing species as particularly dangerous have been established. As a matter of fact, the bio-geographical approach has not been applied so far. For instance, according to the legal regulations in force translocation of native species out of their natural range within the territory of Lebanon is not recognized as introduction of alien species.	

50. Has your country identified national needs and priorities for the implementation of the Guiding Principles? (decision VI/23)	
a) No	
b) No, but needs and priorities are being identified	X
c) Yes, national needs and priorities have been identified (please provide below a list of needs and priorities identified)	
Further comments on the identification of national needs and priorities for the implementation of the Guiding Principles.	
Identification of national needs and priorities for the implementation of the Guiding Principles is done within the frame of the national action plans developed by the Ministry of Environment in 2002, chiefly within the context of the SAP_BIO project and mainly by three action plans as follows:	
Action Plan 1: Establish Conservation Strategies for Coastal Habitats:	
Objective: Develop management strategies for the control of exotic invasive species. Monitoring population dynamics of exotic invasive species and their effects on local marine fauna and flora will allow for better innovation of management strategies.	
Activity: Assessing the impact of invasive species on coastal habitats	
Action Plan 2: Establish a Monitoring strategy for the marine and coastal biodiversity:	
Action 1: Monitoring of the marine populations dynamics through underwater visual census UVC technique	
Action 2: Monitoring of the marine biodiversity by using the bio-indicators method	
Action Plan 3: Develop necessary legislation for the conservation of marine and coastal biodiversity	
Objective: Develop national legislation to avoid the loss and negative impact to marine fauna and flora and ensure their conservation	
Action: Review, develop and /or and update national legislation related to invasive species.	

51. Has your country created mechanisms to coordinate national programmes for applying the Guiding Principles? (decision VI/23)	
a) No	X
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please provide details below)	
Further comments on the mechanisms created to coordinate national programmes for implementing the Guiding Principles.	
A key recommendation of the Protected Areas Project review of policy on non-native species was that the Ministry of Environment should create a lead coordinating unit, to ensure consistency of application of non-native species policies across national protected areas system.	

52. Has your country reviewed relevant policies, legislation and institutions in the light of the Guiding Principles, and adjusted or developed policies, legislation and institutions? (decision VI/23)	
a) No	
b) No, but review under way	
c) Yes, review completed and adjustment proposed (please provide details below)	
d) Yes, adjustment and development ongoing	
e) Yes, some adjustments and development completed (please provide details below)	
Further information on the review, adjustment or development of policies, legislation and institutions in light of the Guiding Principles.	
Some of the legislative measures in relation to the biodiversity impact of non-native species have been or are being addressed through the law of hunting.	
Measures to prevent the introduction of alien species were taken in the protected areas and are covered by the national legislation related to the establishment of each existing nature reserve and by their management plans.	
Relevant policy and institutional issues are being considered and provisions have been included in the EIA draft law.	
Ministerial Decision (Decision 108/1, dated 12/9/1995) prohibiting the import and introduction of all cedar seeds and plants.	

53. Is your country enhancing cooperation between various sectors in order to improve prevention, early detection, eradication and/or control of invasive alien species? (decision VI/23)	
a) No	
b) No, but potential coordination mechanisms are under consideration	X
c) Yes, mechanisms are in place (please provide details below)	
Further comments on cooperation between various sectors.	

54. Is your country collaborating with trading partners and neighboring countries to address threats of invasive alien species to biodiversity in ecosystems that cross international boundaries? (decision VI/23)	
a) No	
b) Yes, relevant collaborative programmes are under development	X
c) Yes, relevant programmes are in place (please specify below the measures taken for this purpose)	
Further comments on collaboration with trading partners and neighboring countries.	
Within the frame of the national biosafety framework elaborated under the Biosafety initiative (2003-2005), the issue of trading partners and neighboring countries in relation to the control of threats of LMOs which might be invasive species to biodiversity is being addressed. Collaboration with neighboring countries is obtained through implemented regional projects such as Agrobiodiversity project, Integrated Management of Cedar Forests project, MedWetCoast project, etc. where the issue of invasive alien species is also considered.	

55. Is your country developing capacity to use risk assessment to address threats of invasive alien species to biodiversity and incorporate such methodologies in environmental impact assessment (EIA) and strategic environmental assessment (SEA)? (decision VI/23)	
a) No	
b) No, but programmes for this purpose are under development	
c) Yes, some activities for developing capacity in this field are being undertaken (please provide details below)	X
d) Yes, comprehensive activities are being undertaken (please provide details below)	
Further information on capacity development to address threats of invasive alien species.	
Risk assessment is addressed for the threats of imported GMOs and LMOs, in the National Biosafety Framework developed by MoE within the context of the UNEP_GEF Biosafety project.	
In addition, assessment used to address threats of invasive alien species is mainly used in protected areas and to a lesser extent in forestry. The decisions pertaining to the consent for intentional introduction of alien species are issued after having performed assessment of risk that an introduced species might pose to native biodiversity. However, the methods for risk assessment are not specified. The risk posed by alien species is taken into account in EIAs for planned ventures and strategies to a small degree, at least until the draft EIA and SEA decrees are ratified.	

56. Has your country developed financial measures and other policies and tools to promote activities to reduce the threats of invasive species? (decision VI/23)	
a) No	
b) No, but relevant measures and policies are under development	X
c) Yes, some measures, policies and tools are in place (please provide details below)	
d) Yes, comprehensive measures and tools are in place (please provide details below)	
Further comments on the development of financial measures and other policies and tools for the promotion of activities to reduce the threats of invasive species.	
Scientific research on biodiversity, including alien species, in Lebanon is financed by the funds of the NCSR, universities and projects implemented in the country. The protected areas project provided funds to prepare management plans which have addressed the alien species, their impacts and the measures to reduce their threats after setting appropriate policies for this purpose. The Ministry of the Environment is currently financing the updates of these management plans which will develop, among other actions, the detailed principles for dealing with species alien to the native flora and fauna; and the code of practice to raise awareness of the threats posed by invasive species and the risks of imported plants carrying invasive pests and diseases.	
The Ministry of Environment has changed its policy towards the National Council for hunting by setting new terms of references implicating that the council will not benefit from the ministry's annual financial contribution if it releases into the wild introduced species for hunting purposes.	
Whatsoever, costs and possible sources of financing tasks related to reduction of threat posed by alien species in Lebanon have not been seriously addressed or specified yet. There is a real need to attribute to the activities reducing invasive species threats a higher rank of priority in Lebanon.	

Box XLVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
<ul style="list-style-type: none"> a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.
The actions taken are very limited and represented by ministerial decrees prohibiting the introduction of certain plant species.
Laws establishing nature reserves prohibit the introduction of any alien species to the reserve.

Even though, all the shy actions taken in Lebanon to resolve the problem of alien species invasion contribute to implementation of Article 8(h) and Decisions VI/23 and VII/13 of the Conference of the Parties to the Convention. At the same time they contribute to achievement of the targets specified in the Strategic Plan of the Convention for 2002-2010, and also achievement of the "2010 Targets", and particularly Target 6 (Control threats from invasive alien species). The actions taken are also important to achievement of the Millennium Development Goals.

As for the constraints they are of various types but mainly:

- ❖ Limited techniques adopted to the identification of species
- ❖ Absence of real effort deployed for species monitoring and for threat identification
- ❖ Lack of measures to be taken for inducing prevention or treatment if invasion happens
- ❖ All research related to this field are academic and limited to scientific publication.

There are no guidelines and no assessments of threats (pathological or invasiveness or others) done on the presence of species.

Article 8(j) - Traditional knowledge and related provisions

GURTS

57. Has your country created and developed capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities, and other relevant stakeholders to effectively participate in decision-making processes related to genetic use restriction technologies?

a) No	X
b) No, but some programmes are under development	
c) Yes, some programmes are in place (please provide details below)	
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities and other relevant stakeholders to effectively participate in decision-making processes related to GURTs.

Status and Trends

58. Has your country supported indigenous and local communities in undertaking field studies to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities? (decision VII/16)

a) No	X
b) No, but support to relevant studies is being considered	
c) Yes (please provide information on the studies undertaken)	

Further information on the studies undertaken to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities, and priority actions identified.

Akwé:Kon Guidelines

59. Has your country initiated a legal and institutional review of matters related to cultural, environmental and social impact assessment, with a view to incorporating the Akwé:Kon Guidelines into national legislation, policies, and procedures?	
a) No	X
b) No, but review is under way	
c) Yes, a review undertaken (please provide details on the review)	
Further information on the review.	
60. Has your country used the Akwé:Kon Guidelines in any project proposed to take place on sacred sites and/or land and waters traditionally occupied by indigenous and local communities? (decision VII/16)	
a) No	X
b) No, but a review of the Akwé: Kon guidelines is under way	
c) Yes, to some extent (please provide details below)	
d) Yes, to a significant extent (please provide details below)	
Further information on the projects where the Akwé:Kon Guidelines are applied.	

Capacity Building and Participation of Indigenous and Local Communities

61. Has your country undertaken any measures to enhance and strengthen the capacity of indigenous and local communities to be effectively involved in decision-making related to the use of their traditional knowledge, innovations and practices relevant to the conservation and sustainable use of biodiversity? (decision V/16)	
a) No	
b) No, but some programmes being developed	
c) Yes, some measures taken (please provide details below)	X
d) Yes, comprehensive measures taken (please provide details below)	
Further information on the measures to enhance and strengthen the capacity of indigenous and local communities.	
<p>Financial support to local community is addressed through the annual funds provided by the MoE to the local NGOs for achieving activities and projects related to biodiversity in the fields of awareness, development of project proposals to donors, conservation and sustainable use. The funds are given based on assessment of projects proposals submitted by NGOs to the MoE.</p> <p>Furthermore, the MoE provides annual funds for the nature reserves' committees (local communities taking decisions in relation to reserves) as contribution to cover partially the expenses of the reserves' management.</p> <p>The MOE and within the frame of the Protected Areas project is in the process of elaborating a new protected areas strategy and action plan and is as well addressing the establishment of an effective structure for the local management of resources technically, financially and socially.</p> <p>The Protected areas Project becomes progressively supportive of sustainable utilization. The basic measures that were taken include marketable products (traditional food, handicrafts etc..) produce from the local communities surround the reserves, but the recent nomination (in 2005) of Al-Shouf Cedar Nature Reserve as a Biosphere Reserve will encourage customary use of biological resources that is compatible with conservation or sustainable use requirements. Moreover, Organic Farming is initiated recently in the nature reserves through a Pilot Project executed in Tyre Coast Nature Reserve aiming at demonstrating to the farmers the techniques and benefits of organic farming and how to save the ozone layer as well as on how to prevent chemical insecticides and pesticides from impacting non target species through the use of biological safe alternatives. The new framework law for the protected areas which is pending endorsement allows sustainable use of biodiversity in the nature reserves.</p> <p>The Agrobiodiversity project works closely with farmers and the rural communities using their indigenous knowledge for the conservation and sustainable use of agrobiodiversity. The same project identified and promoted alternative sources of income through the participation of local communities in agro biodiversity conservation (apiculture, eco-tourism, use of wild fruits in agro-food processing, organic farming, local healthy food, etc.).</p>	

The Herders Cooperative in Aarsal established a fattening unit based on organic livestock and crop production with the support of the Agrobiodiversity Project, the GTZ Project on Combating Desertification in Lebanon, the AUB-IDRC Project, and the Green Line Association. The aim of the fattening unit is to decrease the pressure on the degraded rangeland while increasing the income of the herders in the region. The project provided and supported the planting of 5,000 shrub seedlings (Salsola and Atriplex) in the vicinity of the fattening unit and will provide the Herders Coop with feed blocks as additional source of feed for the animals in the unit. The project supports a fruit trees nursery operated by Aarsal Rural Development Association (ARDA) for the production of around 9,000 seedlings/year of wild fruit trees and plantlets (from cuttings) of local varieties of several targeted species. These seedlings are distributed to the farmers and used in re-forestation activities. The Hima or IBAs developed by SPNL (NGO) counts on local traditional knowledge of people and builds on their capacity in identification of species and monitoring of their status. AFDC and throughout its centers all over Lebanon is promoting capacity building among local people in relation to forest management

62. Has your country developed appropriate mechanisms, guidelines, legislation or other initiatives to foster and promote the effective participation of indigenous and local communities in decision making, policy planning and development and implementation of the conservation and sustainable use of biodiversity at international, regional, subregional, national and local levels? (decision V/16)

a) No	
b) No, but relevant mechanisms, guidelines and legislation are under development	
c) Yes, some mechanisms, guidelines and legislation are in place (please provide details below)	X

Further information on the mechanisms, guidelines and legislation developed.

Measures to promote the effective participation of local communities were initiated mainly in the protected areas to involve the locals in the conservation and sustainable use of biodiversity inside the nature reserves. This was achieved through the involvement of the local population in the management of the protected area, the creation of job opportunities and income generating activities in relation to the nature reserves (guides, rangers, ecotourism activity, production of traditional food and handicrafts to be sold at the entrance of the reserve etc). The Governmental Appointed Committees that are supervising the work of protected areas management teams are formed from scientists, experts and representatives of the local communities.

The Agrobiodiversity project works closely with farmers and the rural communities using their indigenous knowledge for the conservation and sustainable use of agrobiodiversity. The same project identified and promoted alternative sources of income through the participation of local communities in agro biodiversity conservation (apiculture, eco-tourism, use of wild fruits in agro-food processing, organic farming, local healthy food...).

Several NGOs such as Greenline, YMCA, AFDC use collaborative management involving local or rural communities when addressing environmental issues.

63. Has your country developed mechanisms for promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and effective participation of women in all elements of the programme of work? (decision V/16, annex)

a. No	X
b. No, but relevant mechanisms are being developed	
c. Yes, mechanisms are in place (please provide details below)	

Further comments on the mechanisms for promoting the full and effective participation of women of indigenous and local communities in all elements of the programme of work.

Support to implementation

64. Has your country established national, subregional and/or regional indigenous and local community biodiversity advisory committees?

a. No	
b. No, but relevant work is under way	
c. Yes	X - The local

	<p>communities are represented in some advisory national committees: Committees for the management of the nature reserves were established for each nature reserve through a Ministerial Decision issued by the Minister of Environment. Each committee (Governmental appointed Committee [appointed upon proposals from municipalities, NGOs and other environmentalists from local community]) includes representatives from the local community along with representatives from the public, academic sector and local NGOs. Through these committees, the locals are directly involved in advisory and decision making process related to the management of the nature reserve. The Ministry of Environment has developed with the technical assistance of a group of experts from a private academic institution the American University of Beirut (IBSAR/AUB) and through GEF funds a draft law on Access and Benefit Sharing. One of the major principles provided for in the Draft Law is the sovereignty of the State over biological resources; the State exercises said right</p>
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	<p>in the name and for the benefit of the local communities. The Draft Law designates the MoE through the relevant biodiversity department as the competent national authority to be responsible for the implementation and enforcement of the provisions of the law, in coordination with other relevant ministries. The draft law proposes the creation of an advisory committee headed by the Ministry of Environment and including representatives from relevant ministries and organizations and representatives from local communities, the advisory committee will assist the MoE in its implementation and enforcement of the law, it will have mainly a major role in revising the ABS requests and suggesting its approval or rejection to the MOE.</p> <p>Local NGOs are represented in the Higher Council for hunting (HCH) established by the new hunting law (No. 580 /04). The HCH is headed by the Minister of Environment and includes representatives from concerned government, private and research institutions, associations and syndicates and will play a major advisory role in the</p>
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	development and issuance of the required Ministerial decisions related to the regulation of hunting to be taken by the Minister of Environment.
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65. Has your country assisted indigenous and local community organizations to hold regional meetings to discuss the outcomes of the decisions of the Conference of the Parties and to prepare for meetings under the Convention?

a. No	X
b. Yes (please provide details about the outcome of meetings)	

Further information on the outcome of regional meetings.

66. Has your country supported, financially and otherwise, indigenous and local communities in formulating their own community development and biodiversity conservation plans that will enable such communities to adopt a culturally appropriate strategic, integrated and phased approach to their development needs in line with community goals and objectives?

a. No	
b. Yes, to some extent (please provide details below)	X
c. Yes, to a significant extent (please provide details below)	

Further information on the support provided.

Financial support to local community is addressed through the annual funds provided by the MoE to the local NGOs for achieving activities and projects related to biodiversity in the fields of awareness, development of project proposals to donors, conservation and sustainable use. The funds are given based on assessment of projects proposals submitted by NGOs to the MoE.

Furthermore, the MoE provides annual funds for the nature reserves' committees as contribution to cover partially the expenses of the reserves' management.

The Herders Cooperative in Aarsal established a fattening unit based on organic livestock and crop production with the support of the Agrobiodiversity Project, the GTZ Project on Combating Desertification in Lebanon, the AUB-IDRC Project, and the Green Line Association. The aim of the fattening unit is to decrease the pressure on the degraded rangeland while increasing the income of the herders in the region. The project provided and supported the planting of 5,000 shrub seedlings (Salsola and Atriplex) in the vicinity of the fattening unit and will provide the Herders Coop with feed blocks as additional source of feed for the animals in the unit. The project supports a fruit trees nursery operated by Aarsal Rural Development Association (ARDA) for the production of around 9,000 seedlings/year of wild fruit trees and plantlets (from cuttings) of local varieties of several targeted species. These seedlings are distributed to the farmers and used in reforestation activities.

Box XLVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Lebanon has initiated actions aiming at preservation and conservation of knowledge and practices applied by local communities having traditional life style favoring conservation and sustainable use of biological diversity. Traditional farming practices having effect on conservation of biological diversity like maintaining traditional farming such as grazing and shepherding, breeding and use of traditional animal breeds, such as use of mules for work in forest instead of mechanical equipment, traditional

methods of river regulation with the use of river terraces are some examples. The issues related to protection of local practices and knowledge are reflected in the actions to protect landscapes or in the objectives set within the 2005 NBSAP addendum. These objectives are:

Objective 1: To protect agricultural ecosystems and maintain native biological diversity:

- Establish traditional farms to maintain and propagate the traditional or " heritage" varieties or breeds that are being replaced by " modern" varieties

Objective 2: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities:

- Identify all types of traditional industries such as salt production and sponge fishing

The described activities such as maintaining traditional farming practices, activities to preserve traditional agricultural landscape and activities to improve environmental awareness in local communities contribute to achievement of the 2010 Target.

The activities described above contribute also to achievement of the Millennium Development Goals in agriculture. They also effectively encourage indigenous and local communities to participate in decision making processes and to develop the policy concerning application of traditional knowledge and conservation and sustainable use of traditional and indigenous farming systems and managing them and also enhance indigenous models of agricultural production.

Article 9 - Ex-situ conservation

67. ■ On Article 9(a) and (b), has your country adopted measures for the <i>ex-situ</i> conservation of components of biological diversity native to your country and originating outside your country?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	
Further information on the measures adopted for the <i>ex-situ</i> conservation of components of biodiversity native to your country and originating outside your country.	
<p>A national framework and policy related to <i>ex-situ</i> conservation have not yet been implemented. However, the Lebanese Agricultural Research Institute has been involved in several initiatives related to <i>ex-situ</i> conservation (For example: nurseries of <i>Origanum syriacum</i> and <i>Salvia fruticosa libanoticum</i>). There are two objectives driving Lebanese Agricultural Research Institute's policy regarding <i>ex situ</i> conservation which are the conservation of genetic resources and the conservation of varieties adapted to the local environment.</p> <p>Seed Banks</p> <p>The current in-house capacity of Lebanese Agricultural Research Institute for storing seeds is limited to grapes and cereals, however the infrastructure is inadequate. Therefore, through an international agreement with ICARDA and Royal Botanic Gardens Kew, collections are sent to Kew for storage and there are discussions for the establishment of a gene bank in collaboration with the Lebanese Agricultural Research Institute.</p> <p>Within the context of the Agrobiodiversity Project the Lebanese Agricultural Research Institute focused on wild relatives and land races of cereals mainly wheat and barley for seed increasing in defined plots. Part of the resulting seeds was distributed to farmers while the rest were conserved.</p> <p>The American University of Beirut has established a Biodiversity Seed Bank for Lebanon. The facility is located at the University's Agricultural Research and Education Center (AREC) and consists of two rooms with a total of 74 square meters: one room is environmentally controlled and the other will serve to receive, clean, and package seeds prior to their storage. In addition ASHA USAID funds were sought to purchase the equipment needed for the seed bank.</p> <p>Nurseries</p> <p>Lebanese Agricultural Research Institute has established nurseries for grapes, almonds, and figs. The AFDC (NGO) has established a large scale nursery in Ramlieh village (Mount Lebanon) for its reforestation campaigns. The Environmental Protection Committee in Tripoli (NGO) and a Real estate company in Beirut have established medium scale nurseries of indigenous plants for their urban reforestation campaigns. Another small scale tree nursery in the Ammiq Wetland is used mainly for demonstration purposes. The American University of Beirut initiated a USDA funded collaboration with the Ohio State University (USA) to investigate the propagation and production of native trees with potential ornamental value. Within the same project, several wild plants with potential medicinal value are being researched for propagation and production purposes. Private nursery owners are participating in these activities.</p> <p>Herbaria</p> <p>Several herbaria exist for the preservation of plant species. These have been established at the National Council for Scientific Research, Lebanese Agricultural Research Institute, American University of Beirut, Aammiq Wetland and within the protected areas. The most significant herbarium is the one at the American University of Beirut. The herbarium was founded by George E. Post at AUB from 1869. The Post herbarium contains valuable collection of plants more than 20 000 specimens which represent some 4 200 plant species belonging to more than 950 genera and 178 families. The specimens have been collected over the past 125 years in Lebanon and parts of Syria, Palestine and Jordan. The herbarium including all species listed in "The Flora of Syria, Palestine and Sinai" by George Post</p> <p>The three nature reserves: Horsh Ehden, Al Shouf Cedar and Palm Islands, have created small herbarium within the nature reserves.</p> <p>Propagation</p> <p><i>Ex-situ</i> propagation measures have been limited to project initiatives undertaken at academic institutions. The American University of Beirut is in the process of developing sexual and asexual propagation protocols for selected indigenous plants as well as the establishment of both experimental and demonstration field plots to evaluate production alternatives for selected indigenous species in various regions.</p> <p>Marine Diversity</p>	

In terms of marine resources the Balamand University has planned to establish a public aquarium, and an aquaculture pilot station to replenish resources and to provide industry with fish and is still waiting for funding through project proposals. The National Council for Scientific Research is planning to establish a marine aquarium in along the Northern Coast in the near future.

Fauna

Animal encounter, a non-profit educational facility began was conceived in 1993 as a commitment to preserve Lebanese Wildlife. The center has assisted in the conservation of mammals, birds and reptiles. The encounter acts as rehabilitation center since it receives injured and orphan animals that are released back into nature after being fully recovered. There are several small initiatives that serve more as source of awareness and entertainment rather than *ex-situ* conservation such as small marine museums, a program entitled Fista in which children are exposed to various animals, small parks more like petting zoos, leaflet on rehabilitation and *ex-situ* conservation produced by the Environment Protection Committee in the north and funded by the Hellenic Hospital for Rehabilitation in Greece.

68. On Article 9(c), has your country adopted measures for the reintroduction of threatened species into their natural habitats under appropriate conditions?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for the reintroduction of threatened species into their natural habitats under appropriate conditions.

Lebanon has not adopted any national measures for the reintroduction of threatened species into their natural habitats under appropriate conditions. Instead, the protected areas have adopted the guiding principles of species reintroduction which are listed in the Australian Natural Heritage Principles. More specifically, the Al-Shouf Cedars Nature Reserve is planning to reintroduce the Mountain Gazelle and the Ibex when the appropriate conditions are provided.

69. On Article 9(d), has your country taken measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species.

The new law of hunting # 580/2004 prohibits the collection of animal resources (eggs, chicks, puppies, fledglings, nests, etc.) for any reason and authorizes the Higher Council of Hunting to give special permits for scientific and conservation purposes. A decree issued by the Ministry of Agriculture prohibits the collection of marine turtle eggs. In sometimes, some marine turtle eggs are collected from potentially threatened places to hatch in safer sites in collaboration with the Protected Areas Project, MedWetCoast Project and an international NGO Medasset.

Box XLVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Ex-situ conservation issues have been included in the NBSAP as well as in its update version (2005 addendum).
 Actions undertaken and described in above section (Gene bank establishment negotiations, nurseries, rehabilitation centers...) contribute to the achievement of Goals 2 and 3 of the Strategic Plan of the Convention.
 The actions undertaken also contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.
 Lack of institutional capacity and financial resources are the main challenges to implementation of the Article 9.
 Lack in development and issuance of appropriate legal acts to provide the basis for *ex situ* conservation of crop plant genetic resources and in recognizing those resources as the national heritage constitute another constraint to implementation.

Article 10 - Sustainable use of components of biological diversity

70.? On Article 10(a), has your country integrated consideration of the conservation and sustainable use of biological resources into national decision-making?

No	
No, but steps are being taken	
Yes, in some relevant sectors (please provide details below)	X
Yes, in most relevant sectors (please provide details below)	

Further information on integrating consideration of conservation and sustainable use of biological resources into national decision-making.

Consideration related to conservation and sustainable use of biological resources were incorporated into national legislations as follows:

- Law for the Protection of Environment (law 444/02) has dedicated an entire chapter for the management of natural resources and conservation on biological diversity - specifically articles 47 to 49 which call for the protection and sustainable use of biodiversity, the establishment of nature reserves and for regulating access to genetic resources. Articles 47 states- among other issues- that local population, public and private institutions should collaborate together for the conservation and sustainable use of biodiversity.
- The hunting regulatory law in Lebanon (law no. 580 dated 25/2/2004) promotes the conservation and sustainable use of birds and other terrestrial animal species. The law regulates hunting practices, calls for defining the hunting season, and the permitted time to hunt in the season and for defining the hunting preys and the birds and animals whether wild, resident or migratory which are considered protected all year long and for which hunting is prohibited.
- Draft framework law for protected Areas organizes the establishment and management of nature reserves in the country. The draft framework law tackles the issue of sustainable use inside the nature reserves while the existing laws establishing the current protected areas deal only with strict conservation.
- While the main focus of existing national legislations were on conservation, an important step towards sustainable use was the development by MoE in May 2005 of a draft Law on access to genetic resources and benefit sharing. The draft law aims regulates the access to the Lebanese biological and genetic resources and their components, their sustainable use and the fair and equitable sharing of the benefits arising out of their utilization.
- The Agrobiodiversity project conducted a study that proposes the mechanism for the national domestication of international conventions and agreements. The project did a thorough review of international conventions and agreements related to the conservation and sustainable use of agrobiodiversity, that have been ratified by the Lebanese government or that are expected to be ratified in the future. Results have indicated that there is a serious need to legally regulate and coordinate all issues related to plant genetic resource conservation, use and exchange, especially in the light of the concerned agreements and conventions developed in the region and globally. The relationship and implications of these international conventions on the present national legislation were analyzed and a preliminary proposal for the domestication of the ratified conventions was developed.

Furthermore, the Agrobiodiversity project reviewed the national legislation related to biodiversity, nature protection, and management of natural resources in Lebanon as well as the organizational setup of the concerned public institutions and prepared accordingly a proposal for the establishment of a national plant genetic resources (PGR) programme in Lebanon. The objective of this PGR programme is to regulate the conservation and exchange of the national plant genetic resources by setting the scientific, administrative, institutional and legal framework for this sector, in the light of the international and regional relevant agreements and conventions that were ratified by Lebanon.

Finally, the project produced a final document on policy options at the farm-household, community and national levels that promote sustainable agrobiodiversity conservation and sustainable management of natural resources. These options were based on the socio-economic, ecological and institutional analysis of factors affecting agrobiodiversity. The approach applied for identifying the policy options included assessment of the relevant literature, two in-depth discussions with staff members of the ministries of agriculture and environment, and intensive meetings with representatives of rural communities within the project sites.

- Biodiversity components were integrated in the draft EIA and SEA decrees developed by MoE. A manual on integration biodiversity into impact assessment processes was developed by the MoE and finalized in September 2005. SEA will be a tool to mainstream environmental sustainability including biodiversity in public planning and decision making.

71. ? On Article 10(b), has your country adopted measures relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures adopted relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity.

Lebanon has taken several measures to minimize and avoid adverse impacts on biodiversity, mainly through the following legislations developed by the Ministry of Environment:

- Law for the Protection of Environment which stipulates that incentive measures be given to actions that avoid or minimize impact on environment including biodiversity
- Legislation related to classified sites (nature reserves, natural sites and landscapes, protected forests) which prohibits or organize human activities with adverse impacts on the sites.
- The hunting regulatory law which regulates hunting practices and calls for defining the hunting season whereby hunting will be prohibited in the breeding season of animals and birds and during their migration towards the breeding grounds or while taking care of their young. The hunting law also prohibits the hunting of endangered, rare and threatened birds and animals species and species of environmental and agriculture importance and prohibit hunting in specific sites and areas (nature reserves, cities, villages, picnic areas, public parks, classified sites)
- The draft law on "access and benefit sharing" which will regulate the access to biological resources thus avoiding and minimizing unregulated practices, unsustainable access and use of the genetic resources.
- The draft EIA and SEA decrees which will lead to the minimization of adverse impacts of various projects, plans, programmes and policies on Environment including biodiversity. Biodiversity components and impact assessment were tackled in particular in the biodiversity manual which was developed in August 2005 and which includes practical guidelines for the integration of biodiversity in SEA and Environmental Impact Assessment (EIA) processes.

Legislation issued by the Ministry of Agriculture aims as well at minimizing adverse impact on wild species and ecosystem:

- Forest code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in fact. The forest code bans and organizes human activities with adverse impacts on the forest species. Moreover, fifteen forests were declared protected explicitly by ministerial decisions issued from the Ministry of Agriculture under the amended Forest Code.
- Ministerial Decision regulating the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996)

- Ministerial Decision (Decision 108/1, dated 12/9/1995) prohibiting the import and introduction of all cedar seeds and plants
- Ministerial decision (Decision 340/1 dated 1/8/1996) prohibiting the picking and export of ferrula plant & roots
- Ministerial Decision (Decision 177/1) issued in 1998 regulating the harvesting of oregano and salvia

Other measures aiming at avoiding and minimizing adverse impacts on biological diversity are also adopted by international projects:

- The MedWetCoast project of Lebanon has initiated in 2003 with the "Government Appointed Committee" (GAS) of Tyre Coast Nature Reserve and in collaboration with an international project "the Methyl Bromide Alternative project" (MOE/UNDP/MLF), an academic institution's initiative "Healthy Basket" at the American University of Beirut and two local NGOs: Society for the Protection of Nature (SPNL), and Amwaj for Environment an Organic Farming Pilot Project (4000 m2) in Tyre Coast Nature Reserve that aims at demonstrating to the farmers the techniques and benefits of organic farming and how to save the ozone layer as well as on how to prevent chemical insecticides and pesticides from impacting non target species through the use of biological safe alternatives. The plot is still producing until present organic products and by September 2004, the original plot area was expanded to 17000 m2 in Tyre. As for Aammiq Wetland, an organic plot was also set in 2004 with the assistance of "World Vision" to achieve the same objectives as those in Tyre Coast Nature.
- The GEF/UNDP regional project 'Conservation and sustainable use of dryland agrobiodiversity', implemented in Syria, Jordan, Lebanon, and the Palestinian Authority, has promoted the *in-situ* conservation of wild fruit trees that are endangered by land reclamation efforts to grow field apple, olive, and cherry species, and to build recreational 'summer' villages. Furthermore, the project has carried out activities related to rangeland rehabilitation through the establishment of several demonstration sites in the projects sites namely Aarsal and Nabha to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation. Moreover, the project conducted several eco-botanical surveys to identify factors of agro-biodiversity degradation in the project sites of Nabha, Aarsal, and Ham/Maaraboun

Several activities to minimize or avoid adverse impacts on biodiversity were carried out within the protected areas project such as :

- Adoption of the principle 'No Net Detriment' guiding principle' which requires that all management or other activities, actions or decisions should, as far as is practicable, result in 'No net detriment' or deterioration to the environmental values or condition of the protected area.
- Putting in place a functional Interim Scope Report (small scale EIA report) in Palm Islands Nature Reserve to mitigate the impacts of small development and research projects,
- Carrying capacity studies in some protected areas to avoid damage to biodiversity and environment,
- Providing guided tours to ensure that visitors are not behaving intentionally or unintentionally in adverse way to biodiversity conservation,
- Establishing of lists of activities requiring permits or not or even prohibited in protected areas.
- Formulating ethics of visitation,
- Emphasizing the role or the value of the biodiversity components, etc.

72.? On Article 10(c), has your country put in place measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements.

Several measures have been taken in Lebanon to protect and encourage customary use of biological resources including large scale project, organization programs and individual research projects as indicated below:

- The reforestation efforts by the Ministry of Agriculture with carob and pine tree to allow the local communities harvest them for marketable resources.
- The Lebanese Agricultural Research Institute (LARI) has undertaken a study on under utilized and over exploited species such as *Juniper excelsa*, *Laurus nobilis*, *Pinus brutia* and *Pistacia lentiscus*. The project aimed at increasing awareness and utilization of indigenous Lebanon species that offer great economic returns.
- The Agrobiodiversity project (LARI/UNDP/GEF) has executed many activities that protect and encourage the customary use of biodiversity that is compatible with conservation and sustainable use: the project has established two agro-food centers in the project's sites namely Ham and Nabha, it has established a fattening unit in Aarsal for Herders Cooperative, it has provided support for a fruit trees nursery operated by a local NGO "ARDA" in one project site "Aarsal ", it has conducted training sessions on agro-food processing at ARDA premises for the cooperatives and women groupings in the Project Sites of Aarsal, Ham, Maaraboun and Nabha and has organized an international conference on "Promoting Community-Driven Conservation and Sustainable Use of Dryland Agro-biodiversity" at ICARDA (April 2005)
Furthermore, the project has organized several eco/rural-tours in Ham/Maaraboun and has provided training on organic farming to the local farmers in the projects sites and held a two-day training course, on "Good Governance and Management of Cooperatives"
- The Protected areas Project becomes progressively supportive of sustainable utilization. The basic measures that were taken include marketable products (traditional food, handicrafts etc..) produced by the local communities surround the reserves in addition to the promotion of ecotourism inside the sites, but the recent nomination (in 2005) of Al-Shouf Cedar Nature Reserve as a Biosphere Reserve will encourage customary use of biological resources that is compatible with conservation or sustainable use requirements.
Moreover, The MedWetCoast project has initiated recently organic farming in the nature reserves through a Pilot Project executed in Tyre Coast Nature Reserve aiming at demonstrating to the farmers the techniques and benefits of organic farming and how to save the ozone layer as well as on how to prevent chemical insecticides and pesticides from impacting non target species through the use of biological safe alternatives. Moreover, the project has taken many measures to promote eco-tourism in the nature reserves through providing in summer 2005 an eco-guide training program to the local community to become guides in the protected areas and through the organization of a tour in Ammiq marsh, the five nature reserves of Shouf, Palm Island, Ehden, Benta'el, and Tanourine for tour operators to promote ecotourism in these areas. The tour extended over the weekend and included an over night stay.
- The new draft framework law for the protected areas which is pending endorsement allows sustainable use of biodiversity in the nature reserves.
- A program focusing on organic farming is being implemented by the American University of Beirut. The "Healthy Basket (HB) program was founded by the rural development team of the Faculty of Agricultural and Food Sciences at the American University of Beirut as a non-profit partnership. Its mission is to support, expand and enhance rural livelihoods. It aims at promoting agriculture as a viable livelihood strategy. Through its support of organic farming, Healthy Basket demonstrates its commitment to decreasing environmental pollution and subsequent food contamination. Healthy Basket provides a wide variety of traditional and innovative fresh and processed organic products marketed through individual sales, as well as direct sales to hotels, restaurants, food distribution chains and health shops.
Besides Healthy Basket was the pioneer in introducing the Community Supported Agriculture (CSA) approach on a national scale by fostering a symbiotic partnership between sharers from the urban milieu and farmers from the rural context. The success of the pilot phase soon led to an increased demand, which made it possible to incorporate more farmers. Another innovation of HB was the launch of the interactive website www.organicarabia.com for the online trade of organic goods.
The Healthy Basket (HB) program has played an instrumental role in overcoming the marketing limitations and disfunctionalities by providing innovative community based tools for the marketing the products of organic agriculture in Lebanon.
- A research study carried out by the Agrobiodiversity project in collaboration with the American University of Beirut, assessed the potential uses of wild fruit trees.
- A research study at the Lebanese University is assessing the potential reforestation in the arid areas of Anti-Lebanon with wild fruit trees.

- A project entitled: "Bioprospection: An alternative for sustainable agricultural development" in Lebanon funded by MERCY Corps was launched in 2001 for a 5 years duration. The project was executed by the different faculties at the American University of Beirut in collaboration with Ohio State University (USA) and the University of Toledo (OH, USA). The project main aim was to rely on collaborative research, using biotechnology, to generate new plant-derived commercial products from indigenous Lebanese plants (biodiversity). The purpose is to diversify the agro-industrial portfolio in Lebanon. The project objectives are the following:
 - Identify a short list of key plant species with potential medicinal, bioactive, and/or ornamental value to diversify the national agricultural portfolio and promote sustainable agro-industrial growth in rural communities.
 - Investigate the domestication potential of short listed key plant species.
 - Assess the market potentials for plant species with potential medicinal, bioactive, and/or ornamental value.
 - Initiate production of plants with market potential.
 - Investigate the medicinal/agricultural potential of selected plant species.

For this purpose propagation and on farm trials have been initiated with the intent to domesticate those species that prove to be with market value and to avoid overexploitation of wild species with medicinal and ornamental potential.

- An ongoing research project at the American University of Beirut in collaboration with the University of Reading is addressing the economic valuation of forests in Lebanon.
- A local NGO, AFDC, is enhancing its activities to cover sustainable use through encouraging communities to control grazing and to deal with Beekeeping.
- A three year FAO funded study is currently in progress to assess the utilization of selected plant species as a source of natural products to control plant pests. This project is a collaboration between the American University of Beirut and the Ministry of Agriculture.
- The Ministry of Environment has finalized in June 2005 the preparation of the national part of a PDF-B (Project Development Funds) project funded by GEF entitled "Design, Testing and Evaluating of Best Practices for *in situ* Conservation of Economically Important Wild Species". The project is regional and covers Lebanon, Egypt, Morocco and Turkey, the PDF-B phase supported the design and preparation of a proposal for the full GEF project that will "facilitate the *in-situ* conservation and management of economically important wild plant species" in the four mentioned countries. During this phase, the plant species and their locations and sites were identified by the four participating countries as important to agriculture or forestry or to have some other economic importance, (such as medicinal or aromatic species) in natural or semi-natural habitats and in traditional farming systems.

The regional proposal for the full project was finalized in September 2005 and will be submitted to the GEF soon for approval.

-Since 1993 the Lebanese Agricultural Research Institute (LARI) has been carrying out research in relation to the Lebanese medicinal plants. This ongoing operation is of vital importance especially that Lebanon is rich in agrobiodiversity; the fact that might enhance the progress of medicine in the agricultural sector and would allow endangered species find a field of valorization in the food industry sector which will help in preserving them and ensuring a potential new income to the Lebanese industry. Ways should be found to cultivate these species and prove their status as being sustainable resources for the Lebanese economy in a way that would enhance women labor in poor rural areas thus would have a positive impact on rural development. However there are constraints encountered in this field related mainly to the limited cooperation with local and regional scientific institutions working on herbal, medicinal and aromatic plants.

To note that a conceptualization of a strategy of herbal, medicinal and aromatic plants from Lebanon has been elaborated in the Lebanese Agricultural Research Institute (LARI); a strategy that included components of valorizing medicinal and aromatic plants; defining their ecology, classification, cultures, research methodology, utilized techniques, phytochemistry, usage and medical industry based on plants; in addition this strategy has highlighted suggestions for the Lebanese norms, procedures for controlling medicinal and aromatic plants, provedures for improving their production and ensuring quality control, as well as aspects related to trade, economic goals and aspects related to the consumption of medicinal and aromatic plants. However this strategy is still not applied.

73.? On Article 10(d), has your country put in place measures that help local populations develop and implement remedial action in degraded areas where biological diversity has been reduced?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	
Further information on the measures that help local populations develop and implement remedial action in degraded areas where biodiversity has been reduced.	
<p>- The five years reforestation national project initiated by the Ministry of Environment since 2002 provided the technical, human and financial resources to reforest degraded forest areas in various Lebanese villages. The programme includes the reforestation of a surface of approximately 320 hectares per year distributed throughout the country and covers the areas where forests trees were lost during the civil war or due to forests fires and other factors.</p> <p>- Another reforestation programme is also ran by the AFDC (NGO). It has two main objectives: the first is to raise awareness among local community members in general and students in specific. The second is to contribute to national efforts of increasing the green cover. During 2004, the reforestation campaigns targeted 35 villages in 8 Caza, where 20000 trees were planted, mostly <i>Pinus pinea</i>.</p> <p>- A project proposal was prepared by a task force of the ArabMab Network on the rehabilitation of degraded Ecosystems in Arab countries (including Lebanon) and will be submitted in November 2005 to UNESCO Cairo Office for fundraising.</p> <p>- The Agrobiodiversity project which covers three sites located in an arid areas in the Beqaa region of Lebanon namely : Aarsal, Ham/Maaraboun and Nabha has provided support for the establishment of a fruit trees nursery operated by a local NGO Arda in the village of " Aarsal". It has helped as well the local communities and farmers to implement rangeland rehabilitation activities: it has established several demonstration sites in Aarsal and Nabha to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation. Moreover, the project has organised a traveling workshop on organic farming for farmers from the three Project Sites and offered to them as well a training course on orchard management and post-harvest practices.</p>	

74. ? Has your country identified indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity? (decision V/24)	
a) No	
b) No, but assessment of potential indicators and incentive measures is under way	
c) Yes, indicators and incentive measures identified (please describe below)	
Further comments on the identification of indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity.	
<p>- The Lebanese Environment & Development Observatory (LEDO) was launched by MOE and UNDP in 1999 through funds from EC_life third countries and is one of a group of observatories launched along the Mediterranean countries by a initiative of the Blue Plan office. LEDO has identified 5 indicators of relevance to biodiversity (forest's protection rate, protected coastal area, protection of specific ecosystems, threatened species and burnt forest area per year), 6 indicators of relevance to sustainable development activities and policies (Number of agendas 21 adopted and implemented by local authorities, Wastewater treatment rate before sea release for coastal agglomerations over 100000 inhabitants, Number of wastewater treatment plants, Number of fixed air / water / coastal water monitoring stations, Number of associations involved in environment & sustainable development issues and Rehabilitated quarried land) and 6 policies and strategies (Public expenditure on environmental protection as a % of GDP, Development programs/projects concerning the less favoured rural zones, Total expenditures on protected areas, Expenditure on waste management, Projects undergoing EIA and Ratified International Environmental Conventions). The observatory has indicated for each indicator its concerned institution.</p> <p>- Guidelines for integrating monitoring programs and indicators in the projects set within the</p>	

context of “the National Biodiversity Strategy and Action Plan for Lebanon” were developed in July 2005 within the Top-Up Biodiversity Enabling activity project.

- The Al Fayhaa Union of Municipalities, which groups the municipalities of Tripoli, El-Mina and Beddawi in North Lebanon, obtained technical and financial support from the European Commission to establish an Environment and Development Observatory for Tripoli and its region in 1999. Since then the observatory has identified and monitored a certain number of environmental indicators of which some are directly targeting the sustainable use of the biodiversity in and around the Palm Islands Nature Reserve.
- The Med-Ermis project was executed in November 2000 up till November 2002 with funds from the University of Athens, Greece and was executed by the Faculty of Health at the University of Balamand. The project aimed at enhancing transparency, accountability and good governance in public affairs trough the development of practical indicators to be used at the municipal level in order to provide communities and local authorities with hard, reliable and quantitative data. Nineteen municipalities participated in this phase of the project that resulted in the following:
 - o a total of 110 indicators
 - o indicator data sheet for each indicator
 - o municipality archive survey
 - o door to door survey
 - o a total of 7200 filled survey

The next phase required further funding in order to disseminate the information through a web-based information system to the relevant public in order to enhance transparency, accountability and good governance practices. This phase is currently funded by USAID through the TAG-AMIDEAST, and is being implemented in cooperation with Automation & Computer Technologies (Act). more information are provided on the project website: www.balamand.edu.lb/medermis

- The Law 444 for the Protection of Environment stipulates that incentive measures be given to actions that avoid or minimize impact on environment including biodiversity however this is not implemented so far since the relevant implementation decree is not issued yet.

75. ? Has your country implemented sustainable use practices, programmes and policies for the sustainable use of biological diversity, especially in pursuit of poverty alleviation? (decision V/24)

a) No	
b) No, but potential practices, programmes and policies are under review	
c) Yes, some policies and programmes are in place (please provide details below)	X
d) Yes, comprehensive policies and programmes are in place (please provide details below)	

Further information on sustainable use programmes and policies.

Sustainable use practices, programmes and policies were implemented within some projects executed in collaboration of international organizations mainly:

- The Protected Areas Project:
Ecotourism is promoted in the nature reserves of Al-Shouf Cedars and Ehden Forests through the establishment of wild territory, stargazing sites, hiking zones, birdwatching activities, establishment of information centres, view seeing, plant identifying, sale of local and traditional home made products (honey, jam, sage oil, etc.) and artcrafts. In Palm islands, hiking birdwatching, scuba diving, snorkeling, swimming and sunbathing are the main activities. Other protected areas have adopted a mixture of similar activities.
- The MedWetCoast project :
The MedWetCoast project of Lebanon has initiated in 2003 with the “Government Appointed Committee” (GAS) of Tyre Coast Nature Reserve and in collaboration with an international project “the Methyl Bromide Alternative project” (MOE/UNDP/MLF), an academic institution’s initiative “Healthy Basket” at the American University of Beirut and two local NGOs: Society for the Protection of Nature (SPNL), and Amwaj for Environment an Organic Farming Pilot Project (4000 m2) in Tyre Coast Nature Reserve that aims at demonstrating to the farmers the techniques and benefits of organic farming and how to save the ozone layer and help to conserve Tyre Coast Nature Reserve lands and to provide to the local farmers income generating activities. The plot is still producing until present organic products and by September 2004, the original plot area was expanded to 17000 m2 in Tyre. As for Aammiq Wetland, an organic plot was also set in 2004 with the assistance of “World Vision” to achieve the same objectives as those in Tyre Coast Nature.

Furthermore, the project- Lebanon ran an eco-guide training program between late May and early July 2005 in collaboration with the MoE and the Hans Seidel foundation. It is aimed at training people from the local community to become guides in the protected areas. The objective is to provide motivated locals with the basic skills and knowledge that an eco-guide should possess in order to maximize the experience of visitors in the nature reserves. In addition, it ensures additional income to the local community. The training was done in 7 sessions all on weekends along 11 training modules.

- The Agrobiodiversity project is organizing in cooperation with eco-tour operators trips to agrobiodiversity sites where participants are accompanied by local guides enjoy tours inside villages, meetings with the local community and are introduced to the wild fruit trees in the area. Several local products from the villagers are sold to eco-tourists. Moreover, the project has established two agro-food centers in the project's sites of Ham and Nabha, it has established a fattening unit in Aarsal for Herders Cooperative, it has provided support for a fruit trees nursery operated by a local NGO "ARDA" in one project site "Aarsal " and has provided orchard tractors to Ham and Maaraboun Cooperatives.

Furthermore, the project has organized many capacity building programmes to the local communities: it has offered a traveling workshop on organic farming and a training course on orchard management and post-harvest practices to the farmers from the villages of Aarsal, Nabha, Ham and Maaraboun, it has conducted four training sessions on agro-food processing at ARDA premises for the cooperatives and women groupings in the above mentioned four Project Sites in which an average of 27 women have participated and expressed high interest and enthusiasm for further support in this area; the project held in addition a two-day training course, on "Good Governance and Management of Cooperatives"

These activities carried out by the above mentioned projects helped in creating job opportunities to local communities and in promoting income generating activities thus contributing to poverty alleviation.

- Academic Institutions initiatives:

A programme focusing on organic farming "Healthy Basket" (HB) was founded by the rural development team of the Faculty of Agricultural and Food Sciences at the American University of Beirut as a non-profit partnership. Its mission is to support, expand and enhance rural livelihoods. It aims at promoting agriculture as a viable livelihood strategy. Through its support of organic farming, Healthy Basket demonstrates its commitment to decreasing environmental pollution and subsequent food contamination. Healthy Basket provides a wide variety of traditional and innovative fresh and processed organic products marketed through individual sales, as well as direct sales to hotels, restaurants, food distribution chains and health shops.

Besides Healthy Basket was the pioneer in introducing the Community Supported Agriculture (CSA) approach on a national scale by fostering a symbiotic partnership between sharers from the urban milieu and farmers from the rural context. The success of the pilot phase soon led to an increased demand, which made it possible to incorporate more farmers. Another innovation of HB was the launch of the interactive website www.organicarabia.com for the online trade of organic goods.

HB provided a wider and more accessible platform, by providing co-certification delivered by well trained inspectors and certifiers, in association and under the close supervision of the Dutch international certifying agency SKAL. HB has been privileged by being able to use the facilities of the Environmental Core Laboratory of the American University of Beirut to perform the required tests on soil, water and crop samples from the plots that require certification.

The Healthy Basket program has played an instrumental role in overcoming the marketing limitations and disfunctionalities by providing innovative community based tools for marketing the products of organic agriculture in Lebanon.

HB program started as a simple initiative to market the organic production of the developmental projects run by AUB/FAFS in the Beqaa region (one of them being the Qaraaoun Project in association with Mercy Corps) in reaction to numerous complaints from the farmers about the impossibility to access the traditional markets competitively with their organic produce.

HB was initially initiated within the premises of the Faculty of Agricultural and Food Sciences of the American University of Beirut. Most sharers were faculty, staff and students of the university and all the producers were the farmers enrolled under the different agricultural development projects of FAFS. As the sharers grew in number and became more diversified and as new independent farmers joined the roster of suppliers, HB had to do a strategic move, renting its own premises outside AUB as well as a retail shop.

HB is currently operating according to a new strategic vision, focusing more on the marketing aspects of organic produce and on the further expansion of CSA. Substantial efforts need also to be invested in broadening the access to certification, making it available but also mandatory to all organic

producers of the country.

The Bioprospection project executed by AUB (mentioned in Question 72) will promote sustainable agro-industrial growth in rural communities thus will contribute to poverty alleviation

The initiative undertaken by the Lebanese Agricultural Research Institute (LARI) in relation to the valorization of medicinal plants since 1993 would promote rural development.

- NGOs initiatives:
- SPNL, Al-Shouf Cedar nature reserve committee and Greenline NGO assist the local communities in rural areas for producing long-lasting food as jam, honey, molasses, etc and help the producers to find appropriate market for their labeled products.
- During 2004-2005, the AFDC (NGO) organized national and regional training courses to "Set the General Framework for Planning Eco-Tourism Projects and Activities in Rural Areas", in collaboration with the Royal Society for the Conservation of Nature in Jordan (RSCN) and organized Seminars on Eco-tourism in cooperation with municipalities, AFDC Voluntary System Units, schools and local groups. The aim of these activities is to promote ecotourism as a source of income generation and poverty alleviation.
- The YMCA (NGO) addressed identified problems in rural Lebanon, including uneven post-civil war economic recovery, lack of economic opportunities, rural to urban migration, environmental degradation, and disintegrated structures of civic participation in rural areas. One of the goals of the YMCA is to improve community awareness and the practice of appropriate environmental management procedures.
- With the scope of community empowerment, the YMCA in collaboration with "Atayib Al-Reef" (an association for rural development), conducted trainings in the following areas:
 - Theoretical and practical processing of dairy products.
 - Theoretical and practical processing of jams and compotes.
 - Theoretical and practical processing of molasses, preparation of rose water drink and preservation of food in salted water and tomato.
 - Marketing of agro-food products (labeling requirement, conducting market study and cost calculation).

76.? Has your country developed or explored mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity? (decision V/24)

a) No	
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please describe below)	X

Further comments on the development of mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity.

The involvement of the private sector in the sustainable use of biodiversity is covered by some legislation and some initiatives undertaken by the Ministriies of Environment and of Agriculture:

The private sector was involved mainly in the Ecotourism programmes inside the protected areas that were promoted by the MoE and the management teams of the nature reserves. Some of the nature reserves teams are working in partnership with the eco-tour operators through a "Memorandum of Understanding" between both parties in the aim of enhancing and promoting ecotourism in the sites. Once the draft law of access and benefit sharing will be endorsed, it will promote the economic use of biodiversity by the private sector.

On the other hand, representatives from the private sector are included in the Higher Council for Hunting established through the new hunting law (No 580/04) in particular the Syndicate of Hunting Weapons and Ammunitions Tradesmen and the Lebanese Federation for Shooting and Hunting. The Higher Council for Hunting is an advisory body for all ministerial decisions that will be issued by the Minister of Environment to regulate hunting.

Some initiatives and programmes executed by Academic and research institution and NGOs will lead to the involvement of the private sector:

The Bioprospection project executed by AUB (mentioned in Question 72) is assessing the market potentials for plant species with potential medicinal, bioactive, and/or ornamental value, initiating production of plants with market potential and is investigating the medicinal/agricultural potential of selected plant species thus this initiative will lead to the involvement and partnership with the private sector in the sustainable use of biodiversity.

Also within AUB there are initiatives being promoted with the private sector such as the project entitled A Holistic Landscape Approach to Biodiversity Use in Lebanon: Partnering with landowners initiated in 2003 with funds from Mr. W. Ezzedin a private donor and aiming at developing a model project that exemplifies innovative approaches to the sustainable utilization of natural resources on

privately owned lands. The core objective is to produce high quality essential oils while the fringe objectives 1 & 2 are about goat cheese production & bee keeping; the fringe objective 3 is about composting facility; the fringe objective 4 is about landscape planning and the fringe objective 5 is about community outreach. Preliminary observation from IBSAR production group was used to design field plots and experimental trials at Ezzedin site. Information from designed field plots were collected on biomass and oil yield, as well as oil quality of planted materials, and were compared to results obtained from wild harvests in the selected private land. As for the marketing, it was initiated by screening and contacting interested companies in buying essential oils; also it was addressed through various scientific gatherings to share essential oil products and to set bids.

77. Has your country initiated a process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)

- | | |
|--|----------|
| a) No | |
| b) No, but the principles and guidelines are under review | X |
| c) Yes, a process is being planned | |
| d) Yes, a process has been initiated (please provide detailed information) | |

Further information on the process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.

Principles and guidelines from Addis Ababa for sustainable use of biological diversity are currently under review and analysis at the Ministry of the Environment.

78. Has your country taken any initiative or action to develop and transfer technologies and provide financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)

- | | |
|---|----------|
| a) No | X |
| b) No, but relevant programmes are under development | |
| c) Yes, some technologies developed and transferred and limited financial resources provided (please provide details below) | |
| d) Yes, many technologies developed and transferred and significant financial resources provided (please provide details below) | |

Further comments on the development and transfer of technologies and provision of financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Sustainable use was integrated in different recent national legislation.

Actions related to implementation of Article 10 have been successively undertaken since the establishment of the Protected Areas Project in 1997. Significant progress in the field of sustainable use of biodiversity resources have been achieved particularly in the sectors of forest, agriculture, water and tourism management. On the other hand, marine economy still faces special challenges.

Sustainable use was mainly implemented through ecotourism activities in order to ensure the development of tourism as a rapidly growing economical sector while maintaining a balance between the interest of tourists and the protection of biological diversity; for this purpose several activities such as awareness, capacity building and training on ecotourism were provided to interested local people (including birdwatching, monitoring of turtle nests, plant species identification as part of tourism).

The access and sustainable use of genetic resources for research as well as for different commercial purposes are addressed in the draft law on "Access and benefit sharing".

These activities contribute to the achievement of Goals 2, 3 and 4 of the Strategic Plan of the Convention, 2010 Target, and to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.

As for the constraints encountered in the implementation, they derive mainly from the followings:

- Proper enforcement of existing legislations and rules.
- Lengthy process for the endorsement of the different draft law tackling sustainable use mainly the "Access and benefit Sharing" law and draft framework law on protected areas
- Absence of sustainable and responsible tourism development strategy (ethics and principles of eco-tourism are limited to Protected areas).
- Needs to further introduce, promote and raise public awareness about the concept of sustainable use, its importance for both the biodiversity and the benefits of the local community; and its implementation in various activities related to biodiversity components.

Biodiversity and Tourism

79. ■ Has your country established mechanisms to assess, monitor and measure the impact of tourism on biodiversity?

a)	No	
b)	No, but mechanisms are under development	X
c)	Yes, mechanisms are in place (please specify below)	
d)	Yes, existing mechanisms are under review	

Further comments on the establishment of mechanisms to assess, monitor and measure the impact of tourism on biodiversity.

Although no national level mechanisms are in place, some studies and local and regional projects are taking place. In fact, the impact of tourism on biodiversity is subject to scattered studies and occasional monitoring. Individual elements of that issue are dealt with mainly as a response either to the demand resulting from various management plans for recreational areas or to the obligation forcing some sectors to provide EIA report for development projects. Tourist capacity may also be examined during preparation of project proposals.

Monitoring of the impact of tourism on biological diversity is conducted locally by scientific institutions, universities and some consultants, mainly within protected Areas where such monitoring is initiated by MoE and the protected areas management teams and committees, in Palm Islands Nature Reserve (PINR) the number and quality of visitors are regularly monitored by the Environment and Development Observatory of Tripoli.

In addition:

- A case study of carrying capacity for visitation in PINR was presented in an "EIA- Institutional Strengthening Project –Phase II workshop" in Beirut, January 2001.
- Map Camp Lebanon has conducted a training course on "Carrying Capacity Assessment (CCA) for the Development of Tourism in Mediterranean Coastal Areas" in February 2003.
- PAP/MAP/UNEP prepared and published in July 2003 a Guide entitled "*Good Practice in tourism Carrying Capacity Assessment*" and made it available for consultation at the Ministry of Environment documentation center.
- Within the Camp Project a seminar was held in September 2003 at Sarafand with the topic "Alternative tourism and land planning".
- A workshop on promoting sustainable tourism in Lebanon nature reserve has been undertaken within the frame of the MedWetCoast in August 2005 in collaboration with the ministry of tourism.
- In June 2004 and on the occasion of The World Environment Day and under the patronage of The Ministers of Environment, Tourism, Youth and Sports, AFDC (NGO) organized in cooperation with the Hans Seidel foundation and The Maronite Diocese of Antelias the " Ecotourism Festival 2004" with the aim of increasing awareness to mitigate visitors impacts.
- The Awareness Department at the Ministry of environment organized since 1997 Environmental days, Exhibitions and produced pamphlets and brochures with the aim of conserving biodiversity, increasing awareness and focusing on incentives for communities and visitors to conserve biodiversity while using it.
- The MedWetCoast project- Lebanon ran an eco-guide training program between late May and early July 2005 in collaboration with the MoE and the Hans Seidel foundation. It is aimed at training people from the local community to become guides in the protected areas. The objective is to monitor impact of tourists in Pas, provide motivated locals with the basic skills and knowledge that an eco-guide should possess in order to maximize the experience of visitors in the nature reserves. In addition, it ensures additional income to the local community. The training was done in 7 sessions all on weekends along 11 training modules.
- Study on the impact of eco-tourism on Biophere Reserve is currently undertaken at the Al_Shouf Cedar Biosphere Reserve to meet the requirements of the Regional workshop

which is organized by UNESCO CAIRO OFFICE at Sharm El Sheikh/Egypt and will take place in November 2005.

80. Has your country provided educational and training programmes to the tourism operators so as to increase their awareness of the impacts of tourism on biodiversity and upgrade the technical capacity at the local level to minimize the impacts? (decision V/25)

- | | |
|---|---|
| a) No | |
| b) No, but programmes are under development | |
| c) Yes, programmes are in place (please describe below) | X |

Further comments on educational and training programmes provided to tourism operators.

The issues concerning the impact of tourism on biodiversity are included in the strategy of the Protected Areas Project which consists of involving tour operators in all environmental awareness and environmental education workshops. Moreover, the tour operators are invited when necessary to attend the meetings of the Protected Areas Coordinating Committee. As part of this strategy, periodical training sessions are also arranged for tourist operators in form of guided tours in protected areas to increase their capability understanding sustainable tourism and balance "tourism-biodiversity."

An informative package with a visitor program form containing guidelines for appropriate visitation, code of conduct for reserves and rules and regulations in the protected areas was distributed in March 2004 to all major tour operators with the aim of promoting clean tourism in all the nature reserves among traditional tourism sector.

The MedWetCoast (MOE/UNDP/FFEM) with co-funds from Hanns Seidal foundation (A German foundation) has organized a series of awareness and training sessions for concerned people from the tourism operators, faculties of tourism in the academic institutions, Ministry of Tourism and local communities to raise their awareness about ecotourism, reducing impact of tourism on biodiversity, protection and sustainable use of biodiversity in addition to providing them with necessary knowledge and technical capacity to be able to work as eco-guides.

The sessions were conducted from May till July 2005 and were given by scientists and specialists in fauna, flora, and ecotourism in addition to training about safety measures which were provided by the Red Cross.

81. Does your country provide indigenous and local communities with capacity-building and financial resources to support their participation in tourism policy-making, development planning, product development and management? (decision VII/14)

- | | |
|--|---|
| a) No | |
| b) No, but relevant programmes are being considered | |
| c) Yes, some programmes are in place (please provide details below) | X |
| d) Yes, comprehensive programmes are in place (please provide details below) | |

Further comments in the capacity-building and financial resources provided to indigenous and local communities to support their participation in tourism policy-making, development planning, product development and management.

The Ministry of Environment supports various initiatives undertaken by local communities, local NGOs and academic institutions to integrate biodiversity conservation in their activities, projects and awareness programmes.

This support could be summarized as follows:

- Support to local communities, NGOS and universities in developing projects proposals related to biodiversity conservation and sustainable use and in seeking necessary funds through their submission to relevant donors.
- Support to academic institutions and NGOs to implement projects, programmes and activities in the biodiversity field.
- Support in the awareness campaigns and different events carried out by different stakeholders on biodiversity issues with particular attention to eco-tourism.
- Coordination between MoE and the key actors in biodiversity in Lebanon (e.g NGOs, concerned academic institutions, local communities and others) is a continuous process.

The Ministry of the Environment and the Protected Areas Project have allocated resources during the period 1997–2004 for use in projects, reports, and planning related to the management and protection of threatened species in protected areas and to implement projects of relevance to

awareness and eco-tourism. The recipients of these funds included the governmental appointed committees of several nature reserves, NGOs, universities, and consultants.

Measures to promote the effective participation of local communities were initiated mainly in the protected areas to involve the locals in the conservation and sustainable use of biodiversity inside the nature reserves. This was achieved through the involvement of the local population in the management of the protected area, the creation of job opportunities and income generating activities in relation to the nature reserves (guides, rangers, ecotourism activity, production of traditional food and handicrafts to be sold at the entrance of the reserve etc...). Some protected areas supported the surrounding local communities through marketing their traditional products in their tourist information centers. These products include jams, honey, olive oil, sage oil, thyme essence, Holy oil; laurel soap, olive oil soap, lavender soap, vinaigre; infusions, condiment, dried fruit, dairy products, syrup and distilled water of rose or flower; carved timber, handicrafts, nuts, perfumes, herbal medicines etc. to not list more. Other protected areas allow beekeepers to place their hives with the reserve.

The MedWetCoast project (FFEM/MoE/UNDP) has initiated since 2004 ecotourism activities in Tyre Coast nature reserve and promoted the bed & breakfast package in the locals' houses thus helping in generating incomes for local people. Furthermore, necessary capacity building and training were provided to interested local people on marine turtles monitoring to enable them to work as guides and participate in the implementation of ecotourism activities in the reserve.

Moreover, the ecotourism awareness and training programme organized by the MedWetCoast project (mentioned in question 80) has provided local communities with necessary knowledge and capacity building to work as eco-guides. During those sessions, financial support was provided to locals through using their houses for accommodation and food.

The Agrobiodiversity project works closely with farmers and the rural communities using their indigenous knowledge for the conservation and sustainable use of agrobiodiversity. The same project identified and promoted alternative sources of income through the participation of local communities in agro biodiversity conservation (apiculture, eco-tourism, use of wild fruits in agro-food processing, organic farming, local healthy food...).

A USAID-funded training session was held in Nabatiyeh on May, 2005, targeting 24 women from 12 different cooperatives operated by the Young Men's Christian Association (YMCA) in the South Lebanon and Nabatiyeh areas. The two-day training covered advanced marketing principles and aimed at enhancing the women's communication skills, introducing women to the concept of sales, negotiations and contracts, and building their capacity at identifying adequate customers and market opportunities, mainly for cultural home made products.

One of the most impressive outcomes of the YMCA-IRDP (Integrated Rural Development Program) in 2003, the Rural Delights brand, emanated from the agricultural income generation for women component. Rural Delights is the brand name of over 100 varied, preservative and chemical free, natural food products. Rural Delights is also the name of the first and only marketing cooperative group that serves the sales and marketing needs of more than 32 women producer groups in Lebanon.

During 2004-2005, the AFDC (NGO) organized national and regional training courses to "Set the General Framework for Planning Eco-Tourism Projects and Activities in Rural Areas", in collaboration with the Royal Society for the Conservation of Nature in Jordan (RSCN) and organized Seminars on Eco-tourism in cooperation with municipalities, AFDC Voluntary System Units, schools and local groups. The aim of these activities is to promote ecotourism as a source of income generation and poverty alleviation.

82. Has your country integrated the Guidelines on Biodiversity and Tourism Development in the development or review of national strategies and plans for tourism development, national biodiversity strategies and actions plans, and other related sectoral strategies? (decision VII/14)

a) No, but the guidelines are under review	
b) No, but a plan is under consideration to integrate some principles of the guidelines into relevant strategies	
c) Yes, a few principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	X
d) Yes, many principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	

Further information on the sectors where the principles of the Guidelines on Biodiversity and Tourism Development are integrated.

In general, the principles of sustainable tourism are laid down both in the NBSAP and in its Addendum

(2005) where at least two objectives address the integrated development of biodiversity and tourism:

Objective 4: Manage forests and ranges for productivity and sustainability:

- Regulate ecotourism.

Objective 5: Provide stability for the ecosystems to permit the establishment of ecological equilibrium:

- Establishing ecological tourism associated with public awareness and environmental education.

Under objectives above, ecotourism and rural tourism have developed quickly in recent years in Lebanon. They support local economy and create at the same time a risk of overexploitation of ecosystem resources. Hence the need for sustainable ecotourism which implies that tourism development may take place only when in line with the requirements of nature conservation and environment protection. Consequently, in regional and local programmes for tourism development, environment capacity and the need for sustainable use have to be taken into account and those forms of tourism which favor biological diversity conservation should be preferred.

Box XLIX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

In order to ensure the development of tourism as a rapidly growing economical sector while maintaining a balance between the interest of tourists and the protection of biological diversity, several activities such as awareness, capacity building and training were provided to interested local people on ecotourism (including birdwatching, monitoring of turtle nests, plant species identification as part of tourism). The main outcomes are:

- Ecotourism is established as a politically valuable concept at the national level
- Educational value driven from leisure experience
- Benefits provided to local communities situated near, or in, officially protected areas as evidence suggests
- Ecotourism acknowledged as a national economic driver
- Reduction of negative impacts generated from tourism activities to the nature environment and biodiversity

The activities above contribute to the achievement of Goals 2, 3 and 4 of the Strategic Plan of the Convention, 2010 Target, and to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.

As for the constraints encountered in the implementation, they derive mainly from the followings:

- absence of sustainable and caring tourism development strategy (ethics of eco-tourism are limited to Protected areas),
- Lack of updates of legislations related to environmental protection in the context of tourism impact on environment.
- Evaluation methodology of the eco-tourism impact on environment and biodiversity is not yet developed and scientific studies about the environmental impact caused by tourism are not yet undertaken.
- Needs for the issuance of a specific permit for the eco-tour operators in order to provide them with a particular legal status that differentiate them from traditional tour operators
- Needs to apply the principles of ecotourism/sustainable tourism to all forms of tourism development.
- Needs to apply the principles of ecotourism/sustainable tourism to the various relevant important sites and not only to protected areas.

Article 11 - Incentive measures

83. ■ Has your country established programmes to identify and adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	
Further comments on the programmes to identify and adopt incentives for the conservation and sustainable use of biodiversity.	
<p>Incentive measures were addressed by the law of protection of Environment (law 444/02) which includes a specific chapter on incentive measures. However, this is not applied yet due to the fact that relevant implementation decree was not issued yet.</p> <p>However, the Ministry of Environment provides support to the farmers in the protected areas to manage their land in the biodiversity friendly way where organic farming is promoted and marketed with the assistance of the managing authorities. Support given from the Rural development activities of the Agro-biodiversity project serves both as incentive for biodiversity conservation as well as social measure preventing rural areas from abandonment.</p>	

84. ■ Has your country developed the mechanisms or approaches to ensure adequate incorporation of both market and non-market values of biological diversity into relevant plans, policies and programmes and other relevant areas? (decisions III/18 and IV/10)	
a) No	
b) No, but relevant mechanisms are under development	X
c) Yes, mechanisms are in place (please provide details below)	
d) Yes, review of impact of mechanisms available (please provide details below)	
Further comments on the mechanism or approaches to incorporate market and non-market values of biodiversity into relevant plans, policies and programmes.	
<p>The system of stimuli and incentives promoting sustainable use of biological conservation is implemented on irregular basis although it concerns mainly agriculture. In that sector, a tax policy is being applied to encourage the production of pine nuts (or pinelets) from <i>Pinus pinea</i>. In fact, the Ministry of Agriculture has set a maximum price for the kilogramme of pine nuts (20 USD) above which the top quality nuts should not be sold on the local market, in addition to the imposition of taxes on the import of nuts. This policy encourages the local production and pushes the consumer to give the priority to the local pine nuts.</p>	

85. ■ Has your country developed training and capacity-building programmes to implement incentive measures and promote private-sector initiatives? (decision III/18)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place	X
d) Yes, many programmes are in place	

86. Does your country take into consideration the proposals for the design and implementation of incentive measures as contained in Annex I to decision VI/15 when designing and implementing incentive measures for the conservation and sustainable use of biodiversity? (decision VI/15)	
a) No	
b) Yes (please provide details below)	X
Further information on the proposals considered when designing and implementing the incentive measures for the conservation and sustainable use of biodiversity.	
<p>Lebanese Ministry of Environment has included in the law of the protection of environment (444/02) incentive measures in a specific chapter and in compliance with the proposals for the design and implementation of incentive measures as contained in Annex I to the decision VI/15. These intensives concern the compensation of the loss due to the restriction of economic activity in the</p>	

protected areas. The objective of the chapter is to compensate loss of income or additional costs resulting from the total or partial restriction of the economic activities (mostly reserves, forestry and river sides and mouths) for the sake of nature protection.

87. Has your country made any progress in removing or mitigating policies or practices that generate perverse incentives for the conservation and sustainable use of biological diversity? (decision VII/18)

- | | |
|---|---|
| a) No | |
| b) No, but identification of such policies and practices is under way | X |
| c) Yes, relevant policies and practices identified but not entirely removed or mitigated (please provide details below) | |
| d) Yes, relevant policies and practices identified and removed or mitigated (please provide details below) | |

Further information on perverse incentives identified and/or removed or mitigated.

Perverse incentives were addressed for the protection of the environment in general (covering biodiversity) by the law of Protection of Environment (No. 444/02) which calls for the principle of polluter payer.

The principle states that every polluter should bear the costs of the preventive measures and the costs of combating pollution and its reduction. However, the principle is not implemented yet; it needs the elaboration of the necessary implementation decrees for the enforcement.

The law 444 is constituted from general principals, sectors, and fields related to environment and to some extent biodiversity, however there is still a need to tackle in details biodiversity components and to issue implementation decrees for EIA as important measures for preventing negative impact on the environment. In addition the law dedicates an entire chapter for the penalties on infractions to the environment.

Box L.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

The most significant incentives mainly support the Rural development activities, chiefly under the Agro-biodiversity project:

The project financed the establishment of fruit tree nurseries for production of around 10,000 seedlings per year of wild and local varieties aiming at their conservation and sustainable use. The nurseries are operated by a local NGO, the Aarsal Rural Development Association. The project also financed a regional training course conducted at the International Center for Agricultural Research in the Dry Areas (ICARDA) on establishment and management of a seed bank, attended by a national staff from LARI.

YMCA (NGO), through USAID fund, established two agro-food processing centers in the Agrobiodiversity Project Sites of Nabha and Ham/Maaraboun. The equipment provided to the centers is co-shared between the project and YMCA. YMCA also provided intensive training (9 weeks) to the local women groupings to be able to operate the centers. The project and YMCA assist the women groupings to establish two cooperatives, which are the main beneficiaries from this initiative.

A training course on orchard management and post-harvest practices was provided by the Agrobiodiversity project to farmers from the villages of Aarsal, Nabha, Ham and Maaraboun.

All the above actions serve both as incentive for biodiversity conservation as well as social measure preventing rural areas from abandonment and contributing in poverty alleviation. Actions undertaken and described in above section contribute to the achievement of all 4 major Goals of the Strategic Plan of the Convention. Incentives provided facilitate the implementation of the several measures of the NBSAP and contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.

Article 12 - Research and training

88. ? On Article 12(a), has your country established programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components?	
a) No	
b) No, but programmes are under development	
c) Yes, programmes are in place (please provide details below)	X
Further information on the programmes for scientific and technical education and training in the measures for identification, conservation and sustainable use of biodiversity.	
<p>Lebanon did not establish a national programme for scientific and technical education and training on biodiversity identification, conservation and sustainable use, however necessary scientific and technical training were provided within the international projects related to biodiversity executed by MoE and LARI in addition to private initiatives from NGOs and academic institutions as follows:</p> <p>- Within the Protected Areas project (MoE/UNDP/GEF, 1996-2005):</p> <p>The National Council for Scientific Research has completed flora and fauna surveys for five protected areas (Aammiq marshes and the four nature reserves of Al Shouf Cedars, Horsh Ehden, Palm Islands and Tyre Coast) based on a comprehensive review of published literature and on numerous visits to the five sites. The NCSR has been also coordinating with the Green Line NGO for the identification of indicators for the biodiversity monitoring program in the protected areas.</p> <p>In 2003, the Lebanese University was selected by the PAP to conduct a biodiversity assessment and monitoring in the above mentioned sites as a second phase of the field studies that was conducted by the NCSR. Activities of the biodiversity assessment started in August 4, 2003.</p> <p>During those activities, necessary know-how on biodiversity identification, assessment and monitoring was provided to the protected areas management teams.</p> <p>Furthermore, techniques for Flora identification and monitoring in addition to basic techniques and practices for the establishment of local herbaria were transferred to the Management teams in the three reserves (Al-Shouf, Ehden and Palm Island) through a programme carried out by the Green Line NGO within the PAP which includes training workshop, weekly follow up visits to the reserves and to some point proceeding with participatory practices to identify flora species at the post-herbaria of the "American University of Beirut" a private university.</p> <p>The Protected Areas Project held several training and capacity building workshops that were mainly addressed to management teams and organized by the MoE in collaboration with IUCN and UNDP. The first was about management of protected areas in October 1997, followed by workshops on the role of PAs in developing local communities in November 1999, on Protected Areas Visitor Management in April 2000. on Collaborative management of Protected areas in November 2000, on Ecotourism in Protected Areas in December 2000 and on Natural and Cultural Heritage Interpretation and Evaluation in September 2002.</p> <p>- Within the Agrobiodiversity project (MoE/UNDP/GEF, 2002- 2005):</p> <p>The establishment of fruit tree nurseries for production of around 10,000 seedlings per year of wild and local varieties aiming at their conservation and sustainable use. The nurseries are operated by a local NGO, the Aarsal Rural Development Association. The project also financed a regional training course conducted at the International Center for Agricultural Research in the Dry Areas (ICARDA) on establishment and management of a seed bank, attended by a national staff from LARI.</p> <p>Furthermore, the project organized for the farmers from the three Project Sites: Aarsal, Ham/Maaraboun and Nabha a traveling workshop on organic farming as well as a training course on orchard management and post-harvest practices.</p> <p>-Within MedWetCoast project in Lebanon (MoE/UNDP/GEF, 1999- 2005):</p> <p>The Ministry of Environment organized in cooperation with MedWetCoast project a lengthy training workshop (May to July, 2005) for a wide variety of stakeholders on the identification of flora and fauna in Lebanon so that participants become interested in nature, and learn that people are both dependent on and responsible for nature.</p> <p>In order to promote the conservation and sustainable use of the protected areas, the project conducted an eco-guide training to the local community to provide them with necessary knowledge and qualifications to become guides in the protected areas (May/June 2005) and it organized as well management planning training for the nature reserves staff thus promoting the conservation and sustainable use of the reserves.</p> <p>Furthermore, training on organic farming was organized in the two project sites: Ammiq marsh and Tyre Coast Nature Reserve to help reduce the use of pesticides. This in turn helps in protecting biodiversity from the harmful effects of pesticides.</p> <p>- Within research institutions</p>	

The National Council for Scientific Research has been engaged in an active dialogue with various partner countries and institutions within the Mediterranean Basin in view of identifying common problems on biodiversity or in view of preparation of joint activities to be submitted to donors. Capacity building and training of Lebanese staff figure prominently in these collaborative activities. Of the joint activities, some provided training workshops to support Sustainable Land Management and biodiversity in the Mediterranean Region. Of them, it is worth to note the followings:

- Coastal environment and marine biodiversity. Joint CEDRE project between Lebanon and France
- Marine pollution and alteration of the Lebanese coast. Joint CEDRE project between Lebanon and France
- Mediterranean network to assess and upgrade monitoring and forecasting activity in the region (MAMA). Joint activity with a consortium of Mediterranean research institutes
- Coastal monitoring of water quality & biota. Joint project with Ministry of Environment & UNEP-MAP
- MedCoastLand - Mediterranean network on soil degradation studies in coastal areas. Joint project with a large number of Euro-Mediterranean institutions.

- Within academic institutions:

The Darwin Initiative project on coastal vegetation (1999-2002): A collaborative project implemented by the Plant Sciences Department at the American University of Beirut, Royal Botanical Garden Kew (England) and the University of Reading aiming at assessing and identifying the coastal flora of Lebanon.

Training workshop has been conducted to build capacities on taxonomic practices for various stakeholders as well as management teams of the nature reserves in Lebanon.

- Within NGOs initiatives:

In April 2004, a national NGO "Association for Forest Development and Conservation" (AFDC) has organised in collaboration with Al-Shouf Cedars Nature reserve and the financial support of Hans Seidel Foundation (German Foundation) a training on plant identification targeting the nature reserves management teams, interested individuals and eco-guide operators and other concerned from various regions in Lebanon (April 2004).

A national NGO "SPNL" is implementing three projects related to birds conservation which includes scientific and technical education and trainings: 1- The IBA programme which started in 2002 in collaboration with Birdlife international under the patronage of the First Lady and the IBA research project implemented for 3 years from 2005-2007 in partnership with A-Rocha-Lebanon to identify the IBAs in Lebanon during which several trainings about bird identification techniques were organized at the national level by SPNL and "A-ROCHA" and were addressed to the management teams and committees of the nature reserves, NGOs, eco-tour operators and ministries. Furthermore an IBA identification workshop was implemented in cooperation with RSCN-BirdLife partner in Jordan. 2- Sustainable hunting projects which includes capacity building for sustainable hunting of migratory birds within the Mediterranean basin (Northern Africa and Middle East) 3- "Conservation of soaring migratory birds in the eastern sector of the Africa- Eurasia flyway system (rift valley and red sea fly ways)" project. All SPNL projects have educational components addressed to schools, and awareness components directed to the general public.

89. ■ On Article 12(b), does your country promote and encourage research which contributes to the conservation and sustainable use of biological diversity?

a) No

b) Yes (please provide details below)

X

Further information on the research which contributes to the conservation and sustainable use of biodiversity.

The NCSR and the Lebanese University allocate financial grants to biodiversity research projects, promote national and international co-operation in view of executing the national science policy aiming at the sustainable conservation and wise use of biodiversity, initiate and co-ordinate multidisciplinary scientific research, promote capacity building and outreach programmes by granting fellowships and by organizing various scientific activities and conduct research through specialized research centers (National Centre for Geophysics, National Centre for Marine Sciences, National Centre for Remote Sensing and the Lebanese Atomic Energy Commission). The NCSR promotes and oversees research on biological diversity and related activities in Lebanon. As such, the NCSR funds individual research projects, sponsors various task forces, and is engaged in continuous biodiversity scientific programmes.

90.? On Article 12(c), does your country promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources?

a) No

b) Yes (please provide details below)

X

Further information on the use of scientific advances in biodiversity research in developing methods for conservation and sustainable use of biodiversity.

See question 88 above and Article 13 below.

Box LI.

Please elaborate below on the implementation of this article specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Education in the field of biodiversity conservation and sustainable use is one of the most important Issues undertaken by the international projects executed in Lebanon and involving ministries, public research institutions, universities and NGOs. Its significance to development of the aware civil society having environment friendly attitude on the one hand and developing well educated staff for environment protection on the other hand are emphasized in the basic strategic documents of the Ministry of Environment: *the draft Workplan of the Protected Areas, 2005*, especially its action 4.6.4 which stresses on the fact that monitoring programs should be based on benchmark scientific field surveys or research, and training of the local communities on monitoring using GIS technology. As such, the Ministry of Environment provided the trainee (schools and general public) with the bases for introducing the principles of conservation and sustainable use of biological diversity and its resources.

Necessary know-how on biodiversity identification, assessment and monitoring was provided to the protected areas management teams by the Protected Areas Project, Agrobiodiversity Project and MedWetCoast Project through the NCSR, Lebanese University, American University of Beirut, University of Balamand, and NGOs such as Greenline, SPNL, AFDC, YMCA, A Rocha, etc.

While the Ministry of Environment is technically supporting several school environmental clubs, the Agrobiodiversity project has developed a curriculum guide, which proposes the integration of the biodiversity concepts into the education curricula. Also school students and teachers benefited from training courses and manuals that were provided by almost all the above.

Diversified quality of those educational forms derives from the diversified scope of projects and constitutes some problem as usually they are developed on the basis of authors' own programmes and they are not subjected to official verification due to a lack of appropriate procedures. Despite all, scientific research remains a priority and the substantive basis for performing tasks related to conservation and sustainable use of biological conservation as also stated in the 2005 NBSAP addendum 2005 (Implement environmental education in school) and the draft workplan of the Protected Areas Project mentioned above.

The support of the activities related to education and training and scientific research and implementation of scientific achievements contributes to achieve targets 2 and 4 of the Strategic Plan of the Convention particularly in relation to enhancement of the national potential for implementation of the priority tasks specified in the national strategy for conservation of biological diversity and implementation of Cartagena Protocol on biosafety. Those activities are an important advance towards achievement of the "2010 Target", particularly in relation to general targets 5, 7 i 8, and also in implementation of the National Strategy and implementation of the Action Plan concerning biological diversity. They also contribute to achievement of the Millennium Development Goals, *Ensure environmental sustainability*.

The main constraints to implementation include:

- Lack of financial resources is one of the key obstacles to successful implementation of the Article.
- Some valuable scientific knowledge is found to be disconnected from practical conservation actions.
- Lack of appropriate verification procedures of training and course programmes.
- Lack of expertise and specialization in the various biodiversity fields.

Article 13 - Public education and awareness

91. Is your country implementing a communication, education and public awareness strategy and promoting public participation in support of the Convention? (Goal 4.1 of the Strategic Plan)	
a) No	
b) No, but a CEPA strategy is under development	
c) Yes, a CEPA strategy developed and public participation promoted to a limited extent (please provide details below)	X
d) Yes, a CEPA strategy developed and public participation promoted to a significant extent (please provide details below)	
Further comments on the implementation of a CEPA strategy and the promotion of public participation in support of the Convention.	
<p>A CEPA strategy focusing specifically on biodiversity was not elaborated however the MOE has elaborated a five year framework strategy for environmental guidance and awareness, this strategy includes various environmental components including biodiversity:</p> <p>The five-year framework strategy for environmental guidance at the Ministry of Environment was elaborated in 2002-2003 by the Service of Environmental Guidance & awareness to draw the general guidelines, goals and objectives for environmental awareness to be followed by the Service. The framework strategy stressed the partnership in environment with a vision of "Transforming the target audience of awareness into partners in environmental awareness. The formulation of the strategy followed a participatory approach within the ministry (involving other services and international projects functioning at MoE), as well as outside the Ministry (involving various ministries).</p> <p>Following the elaboration of a framework strategy, the Service of Environmental Guidance & awareness kicked off the internal planning process, whereby annual action plans are continuously being developed. The last action plan for year 2005 will be integrated within MoE action plan (in the pipeline) which will guarantee higher level of coordination.</p> <p>Examples of what has been done in relation to environmental communication, education and public awareness are:</p> <ul style="list-style-type: none"> - Education: Mainstreaming of environmental concepts within the new scholar curriculum elaborated in 2001, and encouraging the establishment of environmental clubs. - Training: Several workshops and roundtables were organized to mainstream environment in the public sector (CDR, Ministries of Industry, Interior and municipalities, Social Affairs, Economy & trade, etc.) as well as private sector (Association of Lebanese Industrialists, Agriculture Cooperatives, etc.) - Media: MoE collaborates with media institutions, and it is in the process of publishing an Environmental quarterly "Green Pages" that will be distributed for free to different target groups. - Partnership with the Civil society: <ul style="list-style-type: none"> · Capacity Building: Training provided to NGOs interested in environmental activities (in collaboration with other services and international projects at MoE) on different issues like: Financing and fund raising, management and planning, proposal writing, process and significance of EIA and SEA). · Communication: a list of NGOs interested in environmental activities was developed as a database in the Service. Members on that list are continuously updated through electronic correspondence about relevant news, opportunities and announcements. · Partnership: MoE implemented between 1999 and 2001 a Small Grants Program for environmental projects executed by NGOs. This mechanism, which follows scientific and objective principles for selection and monitoring, was transformed into a legal decree. The implementation of this mechanism was done according to priorities defined by MoE, and a significant percentage of funded projects addressed biodiversity, forests and protected areas. 	

92. Is your country undertaking any activities to facilitate the implementation of the programme of work on Communication, Education and Public Awareness as contained in the annex to decision VI/19? (decision VI/19)	
a) No	
b) No, but some programmes are under development	
c) Yes, some activities are being undertaken (please provide details below)	X
d) Yes, many activities are being undertaken (please provide details below)	x

Further comments on the activities to facilitate the implementation of the programme of work on CEPA.

The Ministry of Environment is currently establishing the national biodiversity and biosafety clearing-house which will promote communication about all issues related to biodiversity.

A national database on biodiversity publications, thesis, and national institutions dealing with biodiversity was developed and will be posted on the Lebanese biodiversity clearing-house which will be linked on MoE website, CBD clearing-house and other sites of interest.

At the present, the MoE website is posting information related to initiatives, activities, projects and news related to biodiversity among other environmental information <http://www.MoE.gov.lb/>

The Service of Guidance and Awareness at the MoE is continuously organizing workshops and awareness campaign related to various environmental topics among them biodiversity. The Service prepares as well many awareness materials (posters, booklets, brochures etc.) and disseminates them to the different stakeholders.

The project "Enhancement of the Permanent Environmental Awareness Unit at MoE" (EPEAU) funded by EC-life third countries and executed by MoE in collaboration with UNDP between 2002 and 2004 prepared awareness tool kits covering four environmental topics namely: Biodiversity, Water, Solid Waste and Waste Water. The awareness tool kits include a presentation on each subject (power point and hard copies) with a training manual covering detailed information about the presentation. A training of trainers (TOT) sessions were organized targeting the Social workers employed by the Ministry of Social Affairs in decentralized development centers over the Lebanese territory, providing them with the necessary baseline knowledge and skills that will enable them to conduct environmental seminars and educational sessions (besides their usual health and social sessions). The ToT was organized over three sessions, by the Service of Awareness & Guidance at MOE in collaboration with the NGO unit at the Ministry of Social Affairs, and with the support of Hanns Seidel Foundation and Freiderich Eibert Foundation. The lectures were delivered by concerned MoE staff.

International biodiversity projects functioning at MoE and LARI include public awareness components, whereby different awareness activities were carried out as follows:

1. Protected areas Project (PAP) (MOE/UNDP/GEF):

- o An educational Video for Nature Reserves in Lebanon, prepared and produced by the "Society for Protection of Natural in Lebanon (SPNL)" NGO
- o Preparation of educational material by the "friends of nature (FON)" NGO: Guidebooks, slides, mobile exhibits, and teachers training courses.
- o Declaration of "March 10" as a National Day for Nature Reserves during an exhibition that took place at the Lebanese University in 2004, which was attended by, Non Governmental Organizations, schools, universities, and nature reserves.

The national day for nature reserves triggered public awareness activities such as radio contests, newspaper articles, TV interviews, digital billboards, TV spots, Questionnaires, Electronic messages, press conference given by the Minister of Environment in addition to other activities undertaken on local basis by the nature reserves' Committees.

Preparation of a brochure on the Nature Reserves by the Environment Information Center (EIC).

Preparation of posters for Marine Turtles by the Environment Information Center (EIC).

Preparation of a "guide for forest guards" EIC/PAP

Preparation of a Poster for the protected areas project

Preparation of a Poster for National Day for Protected Areas- MOE/PAP

Preparation of training manual for protected areas in Lebanon by IUCN consultant (PAP)

Sensitization and awareness campaigns (SPNL/EIC). The campaigns focused on the importance of protected areas for the conservation of biodiversity with particular reference to Al-Shouf Cedars, Horsh Ehden, Palm Islands and Tyre Coast Nature Reserves.

Ongoing awareness activities are being undertaken, where MoE's project staff and NGOs staff are continuously presenting lectures on Protected Areas in clubs, schools, municipalities, etc.

2. MedWetCoast project (MoE/UNDP/FFEM):

- An eco-guide training program in collaboration with the MedWetCoast and the Hans Seidel foundation. The training aimed at training people from the local community to become guides in the protected areas. (May/June 2005)
- Two awareness campaigns in schools in Tyre; in 2004, 1200 students were included in the activities and in 2005, 1700 students were included.
- Awareness campaign for decision makers about wetlands policies and strategies and the importance of wetland (Planned activity)
- Awareness campaign for kiosk owners along the coast in Tyre nature reserve and for the coast cleaners
- Conducted in summer 2005 a tour in Ammiq marsh, the five nature reserves of Shouf, Palm Island, Ehden, Benta'el, and Tannourine for tour operators to promote ecotourism in these areas. The tour extended over the weekend and included an over night stay.
- Training to the all the protected areas management teams and committees and concerned ministries about management planning.
- Management planning training for nature reserves staff at MoE.
- A poster about ongoing work in the nature reserves was printed and distributed
- A music tape that includes 10 environment awareness songs was produced and distributed. The tape targets the youth and children.
- A four Km green rally paper was organised in Tyre (26 June 2005), Zahle (3 July 2005), and Jounieh (10 July 2005). The activity included biodiversity conservation related questions.
- Summer awareness campaign in Tyre coast nature reserve held on July 16, 2005. The campaign included a competition, tour of reserve and environmental games.
- World Environment Day 2004 was celebrated in an event held in "Merveilles de la Mer" (marine museum) in Jdeideh.
- 40 interns were trained on environmental awareness related issues.
- Presentations were given to schools and groups visiting the Ammiq marsh site.

3. Agrobiodiversity project:

provided four scholarships to students to carry out higher studies related to biodiversity

Organized an international conference on "Promoting Community-Driven Conservation and Sustainable Use of Dryland Agro-biodiversity" at ICARDA-(April 2005)

Training of teachers from local schools on the following topics: Main global and national environmental problems, ecosystems, biodiversity richness of Lebanon, agro-biodiversity, establishment of school environmental clubs and conducting extracurricular activities, environmental education and teaching methodologies.

Development of a Guide that integrates biodiversity concepts in Lebanese education curricula.

Participated in the celebration of The World Food Day in 2004 (theme for the year 2004: Biodiversity for Food Security) through an exhibition: "Biodiversity: For Better Environment and Healthy Food" organized by FAO and MoA in 2004.

The Project produced and broadcasted two TV spots about importance of Agro-biodiversity and its preservation

Held a painting contest on agro-biodiversity for between in schools within the project target area

Held a workshop in Tel Amara (Beqaa region) on "Agro-biodiversity, importance and conservation"

Produced a documentary film on agro-biodiversity in Lebanon

4. Top-Up Biodiversity Enabling Activity (MoE/UNDP/GEF): Organisation of the competition Biatouna Baytouna (Our Environment/our home):

"Be'atuna Bietuna" an Art Expression for Nature Conservation was organized in June 2005 by the Ministry of Environment and the United Nations Development Programme (UNDP) and the Initiative of Biodiversity Studies in Arid Region (IBSAR) at the American University of Beirut (AUB). The

activity aimed at mobilizing Lebanese youths throughout Lebanon to learn more about biodiversity in their region from scientific information as well as knowledge gathered from their communities. The participants received guidance from IBSAR on how to gather and assess biodiversity related information, and learned from "A-Step Away" (an NGO of artists) how to articulate these findings in a relevant public art expression highlighting the need to protect nature in their region.

A public event was held at UNESCO palace on the Occasion of the World Environment Day 2005 where the project proposals developed by the youth were evaluated by a selected jury. The event included as well an exhibition about biodiversity provided by concerned NGOs and biodiversity international projects.

The NCSR has developed two main databases: 1) ABHASS which is a database on research projects sponsored by NCSR in medicine, agriculture, environment, basic sciences, engineering and technology, economy, and related fields and 2) CNRS database which is the on-line catalog on "books, monographs, reports, theses, and research publications" held by the library in the Documentation Centre. These databases are linked to AGRIS, CARIS, CINDA, INIS, ENSDF (USA), CORDIS, CEA publications, FAO on line Catalog and INIST.

The NCSR is one of the major public institutions granting fellowships to Lebanese students to carry out higher studies (Ph.D) related to biodiversity and sustainable development.

In addition, scholarships for students to continue a Masters degree in biodiversity field are provided by some international funded project namely the "Agrobiodiversity project" mentioned above and the project related to the "Integrated Management of Cedar Forests in Lebanon in collaboration with other Mediterranean countries" which is funded by the GEF and is being executed currently by MoE, UNDP and AUB.

In addition to the above mentioned activities, many activities related to education, public awareness and communication in biodiversity were executed by many NGOs

93. Is your country strongly and effectively promoting biodiversity-related issues through the press, the various media and public relations and communications networks at national level? (decision VI/19)

a) No

b) No, but some programmes are under development

c) Yes, to a limited extent (please provide details below)

d) Yes, to a significant extent (please provide details below)

x

Further comments on the promotion of biodiversity-related issues through the press, the various media and public relations and communications networks at national level.

Press and various media are continuously invited to cover workshops, activities and different events related to biodiversity organized by the government institutions or through international projects executed by the government.

Furthermore, most of Lebanese newspapers have dedicated a page related to the environment where they tackle different environmental subjects including biodiversity in addition to a private magazine dealing exclusively with issues related to environment and development.

Communication networks are covered by the MoE homepage and will be promoted through the biodiversity clearing-house once it will become operational.

94. Does your country promote the communication, education and public awareness of biodiversity at the local level? (decision VI/19)

a) No

b) Yes (please provide details below)

X

Further information on the efforts to promote the communication, education and public awareness of biodiversity at the local level.

Communication and Public awareness are promoted at the local levels through different events, workshop and campaigns organized in the Lebanese areas and villages by different institutions mainly: the MoE, the local authorities, the protected areas teams, the concerned NGOs and within the activities of the international funded projects which tackled local communities in a specific area. (Refer to Question 91 above)

95. Is your country supporting national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness? (decision VI/19)	
a) No	
b) No, but some programmes are under development	
c) Yes, some activities supported (please provide details below)	X
d) Yes, many activities supported (please provide details below)	x
Further comments on the support of national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness.	
Lebanon is supporting some activities of the Global Initiative on Education and Public Awareness through the following initiatives:	
<p>1-All levels: Provide access to relevant projects and publications (through relevant ministries homepage mainly: MoE and MoA)</p> <p>- Identify links and provide searchable means to access biodiversity knowledge through the clearing-house (the biodiversity and biosafety clearing-house will be operational soon)</p> <p>2-National level: Promote communication and public awareness at the community levels (through different workshops and awareness campaigns organized in the different Lebanese regions)</p> <p>3-Regional level: through the execution of regional projects related to biodiversity in which Lebanon is a part (Agrobiodiversity project, Tannourine and MedWetCoast project)</p>	

96. Has your country developed adequate capacity to deliver initiatives on communication, education and public awareness?	
a) No	
b) No, but some programmes are under development	
c) Yes, some programmes are being implemented (please provide details below)	X
d) Yes, comprehensive programmes are being implemented (please provide details below)	
Further comments on the development of adequate capacity to deliver initiatives on communication, education and public awareness.	
Capacity building and development to deliver initiatives on communication, education and public awareness were carried out through the project "Enhancement of the Permanent Environmental Awareness Unit at MoE" (EPEAU) functioning at MoE between 2002 and 2004 and through the activities executed by the Service of awareness and guidance at MoE. As examples:	
<ul style="list-style-type: none"> - Training of trainers (TOT) sessions were organized to the Social workers employed by the Ministry of Social Affairs in decentralized development centers over the Lebanese territory, providing them with the necessary baseline knowledge and skills about four topics: Biodiversity, Water, Solid Waste and Waste Water; and providing them with an awareness tool kit including a pre-prepared power point presentation on each subject with a training manual covering detailed information about the presentation to enable them to conduct environmental seminars and educational sessions in their areas (besides their usual health and social sessions). - Workshop in environmental media was given to the Lebanese personnel working in the different media fields to provide them with the necessary basic information about environmental issues. 	
Furthermore, capacity development was implemented through the different international projects related to biodiversity, as example the training of teachers from local schools that was executed by the Agrobiodiversity project on the following topics: Main global and national environmental problems, ecosystems, biodiversity richness of Lebanon, agro-biodiversity, establishment of school environmental clubs and conducting extracurricular activities, environmental education and teaching methodologies.	

97. Does your country promote cooperation and exchange programmes for biodiversity education and awareness at the national, regional and international levels? (decisions IV /10 and VI/19)	
a) No	
b) Yes (please provide details below)	X
Further comments on the promotion of cooperation and exchange programmes for biodiversity education and awareness, at the national, regional and international levels.	
Cooperation and exchange of programmes for biodiversity awareness are undertaken at national and regional level through the projects related to the conservation and sustainable use of biodiversity executed by the government of Lebanon in collaboration with international organizations some of which are regional covering Lebanon with other countries in the Mediterranean region mainly the MedWetCoast project and the Agrobiodiversity project which covered national and regional level cooperation and exchange of programmes; in addition to the Protected Areas project which promoted cooperation and exchange of programmes for education and awareness at national level about biodiversity conservation and sustainable use and importance of nature reserves (info about some of these activities are mentioned in question 91).	

98. Is your country undertaking some CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention?	
a) No (please specify reasons below)	
b) Yes, some activities undertaken for some issues and thematic areas (please provide details below)	X
c) Yes, many activities undertaken for most issues and thematic areas (please provide details below)	
d) Yes, comprehensive activities undertaken for all issues and thematic areas (please provide details below)	
Further comments on the CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention.	
The following thematic areas and cross-cutting issues were promoted through public awareness and education:	
<ul style="list-style-type: none"> - The protected areas, in-situ conservation, marine and coastal biodiversity, mountain biodiversity, forest biodiversity, biological diversity and tourism, traditional knowledge are promoted through the awareness activities related to the Protected Areas project. - The protected areas, in-situ conservation, marine and coastal biodiversity, mountain biodiversity, inland waters, biological diversity and tourism, traditional knowledge are promoted through the awareness activities related to the MedWetCoast project. - The in-situ conservation, agriculture biodiversity, mountain biodiversity, dry and sub humid lands, traditional knowledge are promoted through the awareness activities related to the Protected Areas project. 	

99. Does your country support initiatives by major groups, key actors and stakeholders that integrate biological diversity conservation matters in their practice and education programmes as well as into their relevant sectoral and cross-sectoral plans, programmes and policies? (decision IV/10 and Goal 4.4 of the Strategic Plan)	
a) No	
b) Yes (please provide details below)	X
Further comments on the initiatives by major groups, key actors and stakeholders that integrate biodiversity conservation in their practice and education programmes as well as their relevant sectoral and cross-sectoral plans, programmes and policies.	
The Ministry of Environment supports various initiatives undertaken by local NGOs and academic institutions to integrate biodiversity conservation in their activities, projects and awareness programmes.	
This support could be summarized as follows:	
<ul style="list-style-type: none"> • Support to NGOS and universities in developing projects proposals related to biodiversity conservation and sustainable use and in seeking necessary funds through their submission to relevant donors. 	

- Support to academic institutions and NGOs to implement projects, programmes and activities in the biodiversity field.
- Support in the awareness campaigns and different events carried out by different stakeholders on biodiversity issues.
- Coordination between MoE and the key actors in biodiversity in Lebanon (e.g NGOs, concerned academic institutions and others) is a continuous process.

These initiatives would be integrated under an umbrella strategy by the awareness and guidance Service at MoE to highlight priority actions.

100. Is your country communicating the various elements of the 2010 biodiversity target and establishing appropriate linkages to the Decade on Education for Sustainable Development in the implementation of your national CEPA programmes and activities? (decision VII/24)

- | | |
|---|---|
| a) No | x |
| b) No, but some programmes are under development | |
| c) Yes, some programmes developed and activities undertaken for this purpose (please provide details below) | |
| d) Yes, comprehensive programmes developed and many activities undertaken for this purpose (please provide details below) | |

Further comments on the communication of the various elements of the 2010 biodiversity target and the establishment of linkages to the Decade on Education for Sustainable Development.

The driving force for any environmental initiative is the sustainable development and this is being promoted in two ways either through projects or through the comprehensive annual action plans that are being elaborated in relation to awareness.

Box LII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Public education and awareness issues have been included in the 2005 NBSAP addendum 2005, and they are addressed by all international biodiversity projects operating in Lebanon and by the Service of guidance and awareness at the Ministry of Environment

The main outcomes of different activities implemented in Lebanon are:

- Increased information on biodiversity related issues is delivered to different target groups through the different biodiversity conservation projects and other relevant activities in Lebanon.
- Increased informative materials are prepared and disseminated to the general public.
- More information is available on the web.
- Biodiversity conservation is promoted through the integration of biodiversity issues into the different sectoral plans, programmes and legislation.
- Target people are more aware about biodiversity issues and the importance of its conservation and sustainable use.

Actions undertaken and described above contribute to the achievement of Goal 4 of the Strategic Plan of the Convention and contribute to the implementation of the Millennium Development Goal 7 Ensure environmental sustainability.

The main constraints facing public education and awareness activities are:

- Need for further resources and capacities (financial resources, human resources)
- In some cases, a simple public awareness campaign is not sufficient; it will not achieve its goals and will not raise the understanding of people about biodiversity conservation issues thus will not lead to a change in their behavior. e.g.: Difficulties are encountered in the communication between the government in one hand and the landowners and local communities in the other hand in some cases when conservation activities are planned to be implemented in their areas. One example is given in the process of establishment of protected areas: several solutions related to biological diversity conservation were rejected by local populations at the beginning and a comprehensive and regular public awareness campaigns

were needed for this purpose.

- Sometimes, it is difficult to measure the effect and impact of the awareness and education activities on the public and to verify to which extent the public awareness have contributed to the conservation and sustainable use of biodiversity.

Article 14 - Impact assessment and minimizing adverse impacts

101. On Article 14.1(a), has your country developed legislation requiring an environmental impact assessment of proposed projects likely to have adverse effects on biological diversity?

a) No	
b) No, legislation is still in early stages of development	
c) No, but legislation is in advanced stages of development	
d) Yes, legislation is in place (please provide details below)	X
e) Yes, review of implementation available (please provide details below)	

Further information on the legislation requiring EIA of proposed projects likely to have adverse effects on biodiversity.

The Environmental Impact Assessment (EIA) concept was endorsed through the Law for the Protection of the Environment (no 444/02) which set in article 4 many environmental principles one of which is the EIA principle; the law states that this principle should be used as a planning and management tool for preventing pollution and minimizing degradation of natural resources. Impact Assessment was addressed in particular through articles 21, 22 and 23 of the law:

Article 21, stipulates that concerned institutions, both in public and private sectors should carry out Initial Environment Evaluation (IEE) or EIA studies to projects likely to threaten the environment due to their extent, nature, impact or activities. The MoE undertakes the review of studies and consequently provides its approval after verification of their compliance with environmental strategy and sustainability of natural resources.

Article 22, elaborates on the word "project" to include all activities dealing with construction or the likes, all activities affecting the natural environment through extraction or dumping of natural resources, or any proposed program, study, investment, or management that might affect a whole Lebanese area or a certain sector. The projects also include any change, addition, expansion, rehabilitation or closure of any activities mentioned above. The IEE and EIA study and its respective monitoring are done on the expense of the project developer

Article 23 proposes a list of all projects for which an IEE is mandatory and another list of all projects for which an EIA is mandatory.

Based on the law 444, a draft EIA decree was prepared by the Ministry of Environment and submitted to the Council of Ministers for endorsement. The draft EIA decree includes details related to various steps of EIA system (screening, scoping, review and monitoring). The draft decree states that all major development, infrastructure and industrial projects will have to undergo an EIA study including effects on biodiversity, in order to promote conservation activities before receiving approval.

102. On Article 14.1(b), has your country developed mechanisms to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biological diversity?

b) No	
c) No, mechanisms are still in early stages of development	
d) No, but mechanisms are in advanced stages of development	
e) Yes, mechanisms are in place (please provide details below)	X

Further comments on the mechanisms developed to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biodiversity.

Strategic Environmental Assessment (SEA) is in their infancy stage in Lebanon. In late 2002, the Ministry of Environment started the implementation of the SEA project funded by EC-life third countries and managed by UNDP; the project will last till end of the year 2005 and aims at mainstreaming environmental considerations into sectoral plans and programmes. Based on the law for the protection of Environment (law 444/02) the project prepared a draft decree for the implementation of SEA at a national level and submitted it to the Council of Ministers for approval. Once issued, the implementation of the SEA decree would de facto lead to the minimization of adverse impacts of plans, programmes and policies on biodiversity.

In addition to the legal framework, the project proposed the relevant institutional and procedural frameworks for the implementation of SEA at the national level. SEA comes in line with the Millenium Development Goal No.7 on enhancing environmental sustainability. SEA is a tool to mainstream environmental sustainability in public planning and decision making.

Moreover, based on the need for the integration of biodiversity components into impact assessment processes, the SEA project secured a small grant from the International Association for impact assessment (IAIA) to develop practical guidelines, in the form of a manual, for the integration of biodiversity in SEA and Environmental Impact Assessment (EIA). On behalf of the SEA project, The manual was developed by a national NGO "SPNL" in coordination with the MOE and SEA project and was finalized in September 2005.

103. ■ On Article 14.1(c), is your country implementing bilateral, regional and/or multilateral agreements on activities likely to significantly affect biological diversity outside your country's jurisdiction?

a) No	X
b) No, but assessment of options is in progress	
c) Yes, some completed, others in progress (please provide details below)	
d) Yes (please provide details below)	

Further information on the bilateral, regional and/or multilateral agreements on activities likely to significantly affect biodiversity outside your country's jurisdiction.

104. ■ On Article 14.1(d), has your country put mechanisms in place to prevent or minimize danger or damage originating in your territory to biological diversity in the territory of other Parties or in areas beyond the limits of national jurisdiction?

a) No	X
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place based on current scientific knowledge	

105. ■ On Article 14.1(e), has your country established national mechanisms for emergency response to activities or events which present a grave and imminent danger to biological diversity?

a) No	
b) No, mechanisms are still in early stages of development	X
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	

Further information on national mechanisms for emergency response to the activities or events which present a grave and imminent danger to biodiversity.

The law for the protection of Environment (law 444/02) states that an emergency action plan should be elaborated for each region in Lebanon as response to any activities that might have negative impact on the environment in general including biodiversity; however it has not been developed yet. However measures in this regard are being addressed through the SEA plans and programmes and trough EIA studies for projects. Monitoring on the implementation of the convenient measures are still limited and this is due to the lack in the technical and human resources.

Regarding the integration of the biodiversity components into national legislation, there is a need for a cooperative initiative between legal and technical experts .

106. Is your country applying the Guidelines for Incorporating Biodiversity-related Issues into Environment-Impact-Assessment Legislation or Processes and in Strategic Impact Assessment as contained in the annex to decision VI/7 in the context of the implementation of paragraph 1 of Article 14? (decision VI/7)	
a) No	
b) No, but application of the guidelines under consideration	
c) Yes, some aspects being applied (please specify below)	X
d) Yes, major aspects being applied (please specify below)	
Further comments on application of the guidelines.	
Refer to questions 101 and 102 above.	

107. On Article 14 (2), has your country put in place national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity? (decision VI/11)	
a) No	
b) Yes (please specify the measures)	X
Further comments on national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity.	
<p>The law 444 issued in 2002, has addressed the polluter pay principle. The law is constituted from general principals, sectors, and fields related to environment and to some extent biodiversity, however there is still a need to tackle in details biodiversity components and to issue implementation decrees for EIA as important measures for preventing negative impact on the environment.</p> <p>In March 2003 and up to September 2005, the MoE has hosted a project: Strengthening the Environmental Legislation Development and Application System in Lebanon (SELDAS) funded by Ec-Life third countries programme and managed by UNESCO-Cousteau eco-technique chair and University of Balamand. This project aimed at:</p> <ul style="list-style-type: none"> - Diagnosing the current legal setting related to biodiversity in Lebanon and for that sake a book has been published. - Organizing training sessions and awareness on legal drafting and application of litigation (3 trainings and 40 awareness sessions addressed to public sector, line ministries, academic, NGOs, associations, private sector, law firms' consultancies and environmental firms' consultancies) - Promoting environmental law education through integrating law courses in several schools of law and through networking with the ministry of education about environmental scholarships - Drafting a Pilot legislation on the protection of air quality (decision 10245, dated 6/6/2003). 	

108. Has your country put in place any measures to prevent damage to biological diversity?	
a) No	
b) No, but some measures are being developed	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	
Further information on the measures in place to prevent damage to biological diversity.	
<p>Within the frame of the law for the protection of the environment (law 444/02), the following measures were addressed :</p> <ul style="list-style-type: none"> - Article 4 has addressed the polluter pay principle - Articles 21 and 23 have addressed the EIA - Articles 47,48 and 49 have addressed biodiversity - Article 50 has addressed the need for an emergency action plan response - Articles 51,52 and 53 have addressed liabilities - Articles 54,55,56,57,58,61, 62 and 63 have addressed penalties on infractions to the environment 	

109. Is your country cooperating with other Parties to strengthen capacities at the national level for the prevention of damage to biodiversity, establishment and implementation of national legislative regimes, policy and administrative measures on liability and redress? (decision VI/11)	
a) No	
b) No, but cooperation is under consideration	
c) No, but cooperative programmes are under development	
d) Yes, some cooperative activities being undertaken (please provide details below)	X
e) Yes, comprehensive cooperative activities being undertaken (please provide details below)	
Further comments on cooperation with other Parties to strengthen capacities for the prevention of damage to biodiversity.	
<p>The law for the Protection of Environment (law 444/02) and the EIA draft decree were developed by MoE through projects funded by the METAP and managed by World Bank. During the development of both legislations, a review of related legislative regimes adopted by the neighboring countries was conducted. In addition, exchange of expertise in this regard with other countries was done through the participation of Lebanon in different regional meetings to discuss EIA processes and related legislative regimes and policy.</p> <p>On the other hand, the MoE has mobilized funds from international donors to implement various projects which include development of national legislation:</p> <p>Through various regional or international initiatives, Lebanon is collaborating with international organizations to build national capacities in relation to the prevention of damage to biodiversity and to the development and implementation of national legislations, policies and administrative measures on liability and redress. Examples of such initiatives: MedWetCoast project and through fund from FFEM has prepared a background paper for the development and implementation of a national wetlands policy in Lebanon; the SISPAM project funded by EC-life is drafting policies about Protected Areas management; the SELDAS project and through funds from EC-Life has elaborated an environmental legislation diagnosis of the status of existing legislations related to biodiversity in Lebanon. Thus, financial resources provided by donors within international projects are helping in diagnosing legislative settings and in drafting new legislations and measures for Lebanon.</p>	

Box LIII.

<p>Please elaborate below on the implementation of this article and associated decisions specifically focusing on:</p> <ul style="list-style-type: none"> a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.
<p>The main outcomes are :</p> <ul style="list-style-type: none"> - Developed legal system: national law (No. 444/02) and its articles of relevance to EIA, introducing the EIA principle and stating that this principle should be used as a planning and management tool for preventing pollution and minimizing degradation of natural resources. Based on the law 444, a draft EIA decree and a draft SEA decree were prepared by the Ministry of Environment and submitted to the Council of Ministers for endorsement. The MoE is the national institution responsible for the procedures of EIA and SEA on the national scale. - The issuance of a manual, for the integration of biodiversity in SEA and Environmental Impact Assessment processes - Training and seminars to target people about EIA concepts - Wide public participation during several EIA projects - Improved public awareness on biodiversity aspects - Growing number of environmentally sound projects having less impact on biodiversity and natural resources. <p>Current legal and institutional system serves as one of footsteps to reach 2010 target. The actions undertaken contribute to the implementation of the Millennium Development Goal 7 <i>Ensure environmental sustainability</i> and to the Strategic Plan of the Convention on Biological Diversity, particularly in relation to conservation of species and habitat diversity.</p>

The main constraints encountered are:

- Lengthy process to endorse the EIA and SEA draft decrees
- Poor scientific bases to develop criteria for evaluation of potential impact on biodiversity
- Need for specialized experts in various biodiversity fields to better mainstream biodiversity components during EIA and SEA processes and related studies
- Lack of specialized people and need for specific materials in universities to improve curriculum on the issue
- Insufficient substantive level of EIA procedures and reports.

Article 15 - Access to genetic resources

110. ■ Has your country endeavored to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms, in accordance with paragraphs 2, 4 and 5 of Article 15?

a) No

b) Yes (please provide details below)

X

Further information on the efforts taken by your country to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms.

The Ministry of Environment has finalized the development of a draft law regulating access to and benefit Sharing of biological and genetic resources of Lebanon, with the technical assistance of the "Initiative for Biodiversity Studies in Arid Regions" (IBSAR) a group of experts from a private academic institution the "American University of Beirut" (AUB). The draft law was prepared with GEF funds through the Top-Up Biodiversity Enabling Activity project executed by the MoE in collaboration with UNDP-Lebanon.

According to the draft law, any person or entity that wishes to access the biological and genetic resources of Lebanon should file an application for that purpose with the Relevant Department at the Ministry of Environment. The application should be accompanied with a legalized Prior Informed Consent obtained from the owner or owners of the property or site where the biological and genetic resources will be collected, subject of the application. If the land is privately owned by the State, or is a maritime or fresh water land, or a protected area then the applicant should obtain the Prior Informed Consent from the appropriate government or administrative authority.

If the application was approved, the Relevant Department of the Ministry of Environment shall invite the applicant as soon as practicable, to sign the Access and Benefit Sharing Agreement with the Ministry, the land owner or owners and/or the local communities where the biological and genetic resources are located. The signed agreement shall constitute the applicant's official authorization to access the biological and genetic resources.

The draft law has stated four types of agreements that can be entered into:

1. Academic research agreement.
2. Conservation of biological and genetic resources agreement.
3. Commercial research agreement.
4. Commercial exploitation agreement.

111. ■ Has your country taken measures to ensure that any scientific research based on genetic resources provided by other Parties is developed and carried out with the full participation of such Parties, in accordance with Article 15(6)?

a) No

b) No, but potential measures are under review

c) Yes, some measures are in place (please provide details below)

d) Yes, comprehensive measures are in place (please provide details below)

X

Further information on the measures to ensure that any scientific research based on genetic resources provided by other Contracting Parties is developed and carried out with the full participation of such Contracting Parties.

it is in the course of preparation

112. ■ Has your country taken measures to ensure the fair and equitable sharing of the results of research and development and of the benefits arising from the commercial and other use of genetic resources with any Contracting Party providing such resources, in accordance with Article 15(7)?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive legislation is in place (please provide details below)	X
e) Yes, comprehensive statutory policy or subsidiary legislation are in place (please provide details below)	
f) Yes, comprehensive policy and administrative measures are in place (please provide details below)	
Further information on the type of measures taken.	
According to the draft law on access and benefit sharing referred to in question 30, any scientific, medical, pharmaceutical, commercial, or legal results derived from the access to, use, research, experiments, and developments of the biological and genetic resources should be shared in a fair and equitable manner with the State and the local land owner or owners and communities whose biological and genetic resources were involved in the activity of the applicant. The sharing of such results shall be provided for in an Access and Benefit Sharing Agreement, which will describe the benefit sharing method that the parties to the agreement shall agree upon, and the share of each one of them.	

113. ■ In developing national measures to address access to genetic resources and benefit-sharing, has your country taken into account the multilateral system of access and benefit-sharing set out in the International Treaty on Plant Genetic Resources for Food and Agriculture?	
a) No	X
b) Yes (please provide details below)	
Further information on national measures taken which consider the multilateral system of access and benefit-sharing as set out in the International Treaty on Plant Genetic Resources for Food and Agriculture.	

114. Is your country using the Bonn Guidelines when developing and drafting legislative, administrative or policy measures on access and benefit-sharing and/or when negotiating contracts and other arrangements under mutually agreed terms for access and benefit-sharing? (decision VII/19A)	
a) No	
b) No, but steps being taken to do so (please provide details below)	
c) Yes (please provide details below)	X
Please provide details and specify successes and constraints in the implementation of the Bonn Guidelines.	
The Bonn guidelines were used in the development of the draft national law on access and benefit sharing.	

115. Has your country adopted national policies or measures, including legislation, which address the role of intellectual property rights in access and benefit-sharing arrangements (i.e. the issue of disclosure of origin/source/legal provenance of genetic resources in applications for intellectual property rights where the subject matter of the application concerns, or makes use of, genetic resources in its development)?	
a) No	X
b) No, but potential policies or measures have been identified (please specify below)	
c) No, but relevant policies or measures are under development (please specify below)	
d) Yes, some policies or measures are in place (please specify below)	

e) Yes, comprehensive policies or measures adopted (please specify below)	
Further information on policies or measures that address the role of IPR in access and benefit-sharing arrangements.	
The draft law on access and benefit sharing did not include, intently, indigenous knowledge and intellectual property. These are to be developed at a later stage by the ministry of economy and trade, in close collaboration with the ministries of environment and agriculture and in close consultation with WIPO.	

116. Has your country been involved in capacity-building activities related to access and benefit-sharing?	
a) Yes (please provide details below)	X
b) No	
Please provide further information on capacity-building activities (your involvement as donor or recipient, key actors involved, target audience, time period, goals and objectives of the capacity-building activities, main capacity-building areas covered, nature of activities). Please also specify whether these activities took into account the Action Plan on capacity-building for access and benefit-sharing adopted at COP VII and available in annex to decision VII/19F.	
The process leading to the elaboration of the draft ABS law involved steps of capacity building for the parties addressing the issues along with regular participatory national meetings to raise awareness and derive feedback from various sectors of the society. Foreign consultancy and advice was also sought to broaden knowledge base. National workshops offered by international experts were conducted to build local capacity and team about potential commercial value and uses of biodiversity and to highlight issues related to access and benefit sharing and intellectual property rights.	

Box LIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
<ul style="list-style-type: none"> a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.
These measures recently taken comply both with the Strategic Plan of Convention Targets 2010 and Millennium Development Targets as well as with the targets adopted in the <i>National Strategy for Conservation and Sustainable Use of Biological Resource</i> and in other national and sectoral documents. Constraints to the implementation are not identified yet due to the fact that the law is still a draft and the main constraint faced at this stage is the lengthy process for the endorsement of the law by the Parliament. There is a lack of financial support for training and capacity building.

Article 16 - Access to and transfer of technology

117. ■ On Article 16(1), has your country taken measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment?	
a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	
Further information on the measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biodiversity or make use of genetic resources and do not cause significant damage to the environment.	
Those measures were addressed in the draft law regulating access to biological and genetic resources of Lebanon and benefit sharing arising out of their utilization prepared by MoE and finalized in May 2005.	
By Ratifying the International Treaty on Plant genetic resources for Food and Agriculture, Lebanon committed itself to implement provisions making it easier to transfer technologies which are of significance to conservation of biological diversity.	

118. ■ On Article 16(3), has your country taken measures so that Parties which provide genetic resources are provided access to and transfer of technology which make use of those resources, on mutually agreed terms?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X - Those measures were addressed in the draft law regulating access to biological and genetic resources of Lebanon and benefit sharing arising out of their utilization prepared by MoE and finalized in May 2005.
d) Yes, comprehensive legislation is in place	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative arrangements are in place	
g) Not applicable	

119. ■ On Article 16(4), has your country taken measures so that the private sector facilitates access to joint development and transfer of relevant technology for the benefit of Government institutions and the private sector of developing countries?	
a) No	
b) No, but potential measures are under review	
c) Yes, some policies and measures are in place (please provide details below)	
d) Yes, comprehensive policies and measures are in place (please provide details below)	
e) Not applicable	X
Further information on the measures taken.	

Box LV.

Please elaborate below on the implementation of this article specifically focusing on:	
a) outcomes and impacts of actions taken;	
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;	
c) contribution to progress towards the 2010 target;	
d) progress in implementing national biodiversity strategies and action plans;	
e) contribution to the achievement of the Millennium Development Goals;	
f) constraints encountered in implementation.	
<p>The main outcomes are international co-operation between scientific institutions as well as among researchers representing various scientific fields related to conservation and sustainable use of biological diversity. That is exemplified by Collaboration for seeds collection between LARI and Kew's seed bank: this initiative was carried out since 1996 where technology transfer was one of the motives behind joint collections. Seed technology transfer to LARI is an ongoing activity involving the training of few LARI staff on seed technology and providing some seed-related equipment to LARI's seed laboratory such as a seed blower, magnifier lenses, seed storage freezers and supplies needed for seed storage and herbarium establishment.</p> <p>The more recent collaborative agreement between Lebanon and the Royal Botanic Gardens Kew provided grants to promote conservation and sustainable use of biodiversity and includes an element of technology transfer to partner countries. This partnership between Royal Botanic Gardens Kew and Lebanon/LARI, one of 15 partnerships of the Millennium Seed Bank (MSB) project, is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology.</p>	

Programme of Work on transfer of technology and technology cooperation

120. Has your country provided financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation? (decision VII/29)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes being implemented (please provide details below)	X
d) Yes, comprehensive programmes being implemented (please provide details below)	
Further comments on the provision of financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation.	
<p>Financial and technical support and training on transfer of technology and technology cooperation were provided within the activities of some international projects and bilateral cooperation, mainly:</p> <ul style="list-style-type: none"> - Collaboration for seeds collection between LARI and Kew's seed bank: this initiative was carried out since 1996 where technology transfer was one of the motives behind joint collections. Seed technology transfer to LARI is an ongoing activity involving the training of few LARI staff on seed technology and providing some seed-related equipment to LARI's seed laboratory such as a seed blower, magnifier lenses, seed storage freezers and supplies needed for seed storage and herbarium establishment. 	

- The Conservation and Sustainable Use of Dryland Agrobiodiversity project (LARI/UNDP/GEF): this five years project started since 1999 and includes among its various activities the establishment of fruit tree nurseries for production of around 10,000 seedlings per year of wild and local varieties aiming at their conservation and sustainable use. The nurseries are operated by a local NGO, the Aarsal Rural Development Association (ARDA). The project also financed a regional training course conducted at the International Center for Agricultural Research in the Dry Areas (ICARDA) on establishment and management of a seed bank, attended by a national staff from LARI. Finally, a seed bank has just been completed at the AREC of AUB that will house collections from the region, with one of its functions being transfer of knowledge and technology between academic and local communities.
Furthermore, the project has conducted training sessions on agro-food processing at ARDA premises for the cooperatives and women groupings in the Project Sites of Aarsal, Ham, Maaraboun and Nabha.
The project has also achieved activities related to rangeland rehabilitation: It has established several demonstration sites in Aarsal and Nabha to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation.
The project has provided transfer of technologies related to organic farming through the organization of a traveling workshop on organic farming for farmers from the three Project Sites: Aarsal, Ham/Maaraboun and Nabha, it has also offered a training course on orchard management and post-harvest practices to those farmers
- "Strengthening of National Capacity and Grassroots in situ Conservation for Sustainable Biodiversity Protection" project also known by Protected areas project:
Within the project, techniques for Flora identification and monitoring through a multi faceted cooperation were transferred to the Management teams in the three nature reserves covered by the project: two forests (Al-shouf cedar reserve and the Ehden nature reserve) and one marine reserve (Palm Islands Nature Reserve). This activity was conducted by a Non-Governmental Organization (GreenLine-A Scientific Association for Conservation) and included as well the preparation of local herbaria for each reserve where the basic techniques and practices for their establishment were given through training workshop, weekly follow up visits to the reserves and to some point proceeding with participatory practices to identify flora species at the Post Herbarium at the American University of Beirut.
Moreover, The Lebanese University has been selected by the PAP to conduct a biodiversity assessment and monitoring in the three above mentioned nature reserves in addition to a marine and coastal reserve "Tyre Coast Nature Reserve" and a private protected site "Ammiq marshes". The activities of the biodiversity assessment started in August 2003 and were conducted in collaboration with the management teams in the reserves consequently techniques on assessment and monitoring of the fauna and flora in the reserves were transferred to the concerned management teams.
- The MedWetCoast- Lebanon (1999-2005), a part of a regional project aiming at biodiversity conservation and proper management of coastal areas and wetlands, it covers two sites: the Tyre Coast Nature Reserve and Aamiq marshes:
The project conducted an eco-guide training program to the people from the local community to provide them with necessary knowledge and skills to become guides in the protected areas. (May/June 2005).
Furthermore, the project carried out training on organic farming to the local farmers in Ammiq and Tyre to help reduce the use of pesticides; This in turn helps in protecting biodiversity from the harmful effects of pesticides.
Transfer of necessary technology to the management teams of the nature reserves about the management planning were also done by the project through training sessions.
- The 'Integrated Management of Cedar Forests in Lebanon in collaboration with other Mediterranean countries', a part of a regional project.
The project started in Lebanon in July 2004, is funded by the GEF, implemented by UNEP and executed by the MoE with the collaboration of the American University of Beirut. This three-year project aims at addressing a serious new threat namely the infestation by a new insect of the genus *Cephalcia* affecting 70% of the Tannourine –Haddath El-Jebbeh forest trees, one of the 12 surviving stands of cedar forests in Lebanon and also the largest.
Current research are being carried out to find out the causes of the insect outbreak and to identify means of managing the insect population.
The project will develop an action plan for integrated management of forests including assessment of insect infestation in cedar forests in the Mediterranean region, accordingly necessary technology on methods to combat and manage this serious disease will be

transferred to other Mediterranean countries in order to prevent any possible future outbreak.

121. Is your country taking any measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation? (decision VII/29)

a) No	
b) No, but some measures being considered	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation.

One of the aims of the Ministry of Environment in Lebanon is to provide the different institutions, universities, NGOs with the possibility of making use of international co-operation in science and technology and encourage them for closer cooperation through endorsement of projects and hosting of workshops of relevance within the Ministry.

122. Has your country made any technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building? (annex to decision VII/29)

a) No	
b) No, but assessments are under way	
c) Yes, basic assessments undertaken (please provide details below)	X
d) Yes, thorough assessments undertaken (please provide details below)	

Further comments on technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building.

The UNEP-GEF Project on the Development of National Biosafety Framework launched in February 2004 was executed by the Ministry of Environment and subcontracted to a team of experts working at the Initiative for Biodiversity Studies in Arid Regions. During the first phase of the project a national assessment on biotechnology, research and development programmes and capacity building needs was executed. The following are the essential results illustrating needs, barriers and constraints sorted out from the surveys report:

- Capacity building and training of technicians working in the field,
- Encourage and enhance the development and establishment of research centers designed to institutionalize biosafety frameworks and biotech research,
- Cooperation between ongoing international programmes,
- Involvement of the private sector
- Technical assistance with equipment and guidance were identified in the fields of Metrology, Calibration and Testing. The guidance is needed in the purchase of equipments under a sound and efficient EC-compliant procurement process to update and upgrade facilities.
- Biotechnology restricted to academic sector,
- Lack of fund,
- Lack of enough accredited labs,
- Gaps in databases and platforms for information exchange and dissemination.

The Quality programme executed by the Ministry of Economy and Trade is one of a series of MEDA II programmes ratified under the EU frame. The programme launched in October 25, 2004 and projected for 2007 comes to support the government of Lebanon to increase the volume of export potential of Lebanese products to European Union markets with a budget of 15 million euros based on a preliminary EU assessment done in this regard. The priority sectors addressed by this programme were seven as follows: agro food industries, electrical goods, construction products, chemical products, labeling and packaging, furniture and min production; these domains were defined by the Lebanese industrial association and the concerned private companies. Various components were to be addressed within this project, the first was about national legislation whereby updates and modifications are to be done in order to improve accreditation for the Lebanese

products; the second was about institutional framework whereby capacity building in terms of administration and organization were meant to be in order to operate at the same level of standards defined by the EU; and the third was about enterprise composition for strengthening the industrial infrastructure and improving data sharing on export specifications and for that sake a national quality center was to be established.

One major component of this programme was to assess and evaluate the national infrastructure in private and public testing laboratories in order to provide a basis for selecting potential labs for their equipment and accreditation. For that sake, a quality advisory unit was formed from 10 local experts and 4 EU experts to follow on the project, in addition to an advisory committee formed from representatives of various domains and sectors (the ministry of economy and trade, LIBNOR, the industrial research institute, the national committee for consumer protection, private laboratories, the league of chambers of trade, industry and agriculture, the Lebanese industrial association, the Lebanese consumer association, academic experts, syndicate of engineers, industrial sector, ministry of industry, ministry of health, ministry of agriculture, ministry of finance, ministry of tourism, the Lebanese agricultural research institute, the central laboratory, the Lebanese institution to promote investments) responsible for the overseeing of the importance of the project related to quality control and strengthening of infrastructure and capacity building in the various related sectors mentioned previously.

The survey was undertaken in May-June 2005 using a detailed questionnaire of 32 questions which helped access current and future needs of industry in relation to international markets. Identification of relevant laboratories testing and certification requirements for identified sectors products and markets and the identification and selection of international accredited laboratories providing relevant certified testing facilities.

The participation of Lebanese lab was comprehensive and results are to be published in due course.

The six million euros project aimed at elaborating a mapping survey based on an assessment of gaps and defined criteria and TOR for selecting potential labs to receive needed equipments and get later on accreditation from international or EU agencies. The project would be supporting 10 labs according to ISO 17020 labs which would be selected on the basis of the gaps' analysis and the ability of the lab to perform tests. For that sake, gaps were identified and trainings were delivered to related labs.

Gaps identified in the non-food sector are related to the unavailability or limited availability for testing petroleum, cement, concrete, paint, electrical and pesticide formulation. As for the food sector, the following were identified as gaps: in the fields of proximates (amino acids), in the field of contaminants (nitrosamines, allergens, food contact materials, medicine, hormones, growth promoters, steroids, foreign bodies, toxins, aflatoxins, ochratoxins), in the field of additives (flavoring agents), in the field of microscopy (foreign bodies, particle size) and in others (GMO testing, rheological tests and food authenticity).

Also what was identified in terms of gaps is the need for a law for methodological labs that links the three frameworks of quality: the legal one handled by the ministry of economy and trade; the industrial one handled by private companies and the scientific frame handled by research institutions. Therefore the project aimed to deliver products and services and as such what was achieved so far are: an inception report and an annual work plan, a proposition for a draft law for controlling and monitoring quality products through setting standards compliant with that of EU . in addition what was done is to study Tahini testing methodologies and assess market accreditation, conduct a research study about industries in various domains in order to highlight recommendations and assess stakeholders reactions to the programme, promote awareness about quality standards in schools, universities and institutions, elaborate on conformity assessment, study and assess capacities of private and public labs.

In addition various trainings were conducted in relation to quality for example staffs from twenty labs were trained according to ISO 17025 required for accreditation in coordination with the LNCSR and the international agency for the atomic power; also staffs from ten labs have attended a training in England about the management and running of labs and on standards required to get accreditation. Also and within the frame of the lab study, an inter-lab comparison programme for proficiency testing was performed and for that sake, four labs (2 public and 2 private) were subject for such a test in the cement and sewage domains of and there are ten suggested labs for future testing in various domains. In addition, there were trainings about HACCP held for water supply authorities and trainings about standardization of lab in relation to surveying and testing market accreditation. Besides and within the frame of project, seminars were held; for example there was a seminar about ISO norms and procedures required held in Saida (south Lebanon) and another seminar held about the official opening of the project in the Bekaa. Further, the project participated in various local or international expositions to promote its achievements in the field of quality for

example the participation in an exposition in Germany to the agro food industry institute whereby brochures about Lebanon programme were shared and in the World trade fair end of September 2005.

As for publications, there is the ABC guide terminology released and the "quality info" a semestrial newsletter that is issued to highlight progress and achievements of the project. Work is being done on integrating a course about programme quality in schools, institutes and universities also there is a continuous tuning arrangement with EU organizations for standardizing internal operation methodology and market surveys.

Within the frame of the project a national quality award for industrialist would be released and to be followed by another one for research and another one for schools.

In relation to the annual plan of 2006, it is being in process of preparation to be submitted to the EU at end 2005.

123. Has your country made any assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies? (annex to decision VII/29)

a) No	X
b) No, but assessments are under way	
c) Yes, some assessments undertaken (please provide details below)	
d) Yes, comprehensive assessments undertaken (please provide details below)	

Further comments on the assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies.

There are no national assessment and risk analysis and associated costs with the introduction of new technologies, though very few private and big institutions have developed independently from national institutions and legal mandates their own assessments.

124. Has your country identified and implemented any measures to develop or strengthen appropriate information systems for technology transfer and cooperation, including assessing capacity building needs? (annex to decision VII/29)

a) No	
b) No, but some programmes are under development	
c) Yes, some programmes are in place and being implemented (please provide details below)	X
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on measures to develop or strengthen appropriate information systems for technology transfer and cooperation.

Under the UNEP-GEF project on the Development of National Biosafety Framework, a Biosafety Clearing House on biosafety was developed and build up with information compiled further to project activities. The BCH is hosted by the Ministry of Environment and aims to provide information on the implementation of the Cartagena Protocol at a later stage as well as information and documents on biotechnology, risk assessment and management and other relevant information to GMOs.

Under the Top-up Biodiversity Enabling Activity project The Clearing House Mechanism for Biodiversity was designed and its component defined. The CHM will be finalized in the next couple of weeks and it will be hosted at the MoE and is intended to be a platform for information exchange on all topics related to CBD. All national assessment on capacity building needs and priorities, good practices in biodiversity conservation and sustainable use, technology transfer and cooperation (TT&C) will be posted on the CHM regularly. A thematic report prepared on TT&C has highlighted potentials and success stories in TT&C in Lebanon – therefore a strategy to integrate TT&C is envisaged by national stakeholders at this stage.

125. Has your country taken any of the measures specified under Target 3.2 of the programme of work as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention? (annex to decision VII/29)

a) No	X
b) No, but a few measures being considered	
c) Yes, some measures taken (please specify below)	
d) Yes, many measures taken (please specify below)	

Further comments on the measures taken as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention.

Box LVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Technologies on protection and management of habitats are widely shared and transferred both on national and regional level. The Protected Areas Project supported Lebanese nature conservation authorities in the process of preparation of management plans, accompanying it with info-exchange and increasing know-how on particular issues, e.g. public involvement and socioeconomic aspects of management of sites.

Collaboration for seeds collection between LARI and Kew's seed bank supported seed technology transfer to LARI.

Through a multi faceted cooperation, techniques for Flora identification and monitoring were transferred to the Management teams in nature reserves covered by the PAP project.

The MedWetCoast project introduced the methodology for site diagnosis and BirdLife International assisted through its criteria in selecting Important Bird Areas. Thus, Lebanon has specialized scientific and technical staff capable of getting access to new technologies, but the main reason hampering implementation of appropriate technologies is a lack of financial means.

Actions undertaken and described above contribute to the achievement of Goal 2 of the Strategic Plan of the Convention.

The electronic site established on www.MoE.gov.lb/ is contributing to dissemination of information, along with other home pages, e.g. home page of LARI, Agrobiodiversity, Ministry of Agriculture and NGOs, etc.

The actions undertaken contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.

Article 17 - Exchange of information

126. On Article 17(1), has your country taken measures to facilitate the exchange of information from publicly available sources with a view to assist with the implementation of the Convention and promote technical and scientific cooperation?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X - Exchange of information was endorsed through national legislation; the law for the protection of environment

(law444/02) introduces the principle of public participation which stipulates - among other issues- that every citizen has the right to access to environmental information as per rules and regulations in force. Furthermore, The Ministry of Environment has developed the national biodiversity and biosafety clearing-house which will be operational soon and will promote information exchange and assist with the implementation of the CBD. The CHM were constructed with GEF funds: the biodiversity CHM through "the Top-Up Biodiversity Enabling activity Project" and the Biosafety CHM through the UNEP_GEF "National Biosafety Framework project" which were both executed by MoE and managed by UNDP_Lebanon. Although the BCH are not operational yet, internet-based information are very efficient in some government institutions: the Ministry of Environment's site (<http://www.MoE.gov.lb>) includes information

concerning various projects, programs, reports and legislation related to the environment field including biodiversity mainly the NBSAP and other biodiversity reports and the SOER . The Ministry of Agriculture's site (<http://www.agriculture.gov.lb>) includes information on laws, agriculture plan for Lebanon, general agriculture related information and the full Biodiversity Country study of Lebanon. The LARI website (<http://www.Lari.gov.lb>) publishes information about the current cooperative research projects, the different LARI stations in Lebanon and their specific missions and has a link to the GEF Agrobiodiversity project website. The latter provides information about the Agrobiodiversity project, its activities, newsletter, team and project's documentation in either English or Arabic languages, especially capacity building and training about environmental education given to teachers and students, a programs for

	<p>genetic resources, land use/ land cover in the project sites, agro ecological zoning, assessment of dryland agrobiodiversity using GIS and remote sensing, apiculture, etc. The website of the NCSR (http://www.cnrs.edu.lb) plays an important role in disseminating information among various public and private institutions within the various research centers: Geophysics, marine sciences, remote sensing and atomic energy commission. The NCSR website displays pages on national, regional and international cooperation as well as on researches and various scientific programmes. General information about biodiversity and the situation in Lebanon are posted as well on the website of various local NGOs in addition to the information related to their campaigns and activities.</p>
d) Yes, comprehensive measures are in place	

The following question (127) is for DEVELOPED COUNTRIES

127. ■ On Article 17(1), do these measures take into account the special needs of developing countries and include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on?	
a) No	
b) Yes, but they do not include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	
c) Yes, and they include categories of information listed in Article 17 (2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	

Box LVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Good examples of making information available to assist implementation of the convention are the following outcomes and impacts:

- Some improvements in creating more accessibility to information, e.g. via web-based databases, web pages, improved library systems and overall improved infrastructure and access, e.g. to the internet.
- A large amount of information (although it is still incomplete) has been collected making it possible to perform a cause-and-effect analysis of long term changes in biodiversity at the level of populations, communities, habitats and ecological systems and for a few species. The main part of that information has been presented in the form of publications which are accessible to the general public. Making use of them, exchange among centers and international exchange are not subject to any restrictions. These publications stimulate further practical conservation activity.
- Endorsement by national legislation to the right to every Lebanese citizen to access to environmental information as per rules and regulations in force (Principle of public participation- Law for the protection of Environment in 2002).

Actions undertaken and described in above section contribute to:

- The achievement of Goals 2 and 4 of the Strategic Plan of the Convention, partially through the CHM.
- The implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.
- The 2010 Target through improved information sharing.
- The implementation of the Article 17
- The implementation of the actions set in the NBSAP,

The main constraint encountered in implementation of successful research projects is lack of coordination at national level as there is no unified format for data collection and management of data flow in the country. Data gathered in different projects are not all delivered to Ministry of Environment or LNCSR. Another constraint is encountered in the reports posted on internet as these are mainly posted without dates and/ or reference. In addition, collections obtained by individuals with some unique pieces of information are not available or difficult to be obtained.

Article 18 - Technical and scientific cooperation

128. ■ On Article 18(1), has your country taken measures to promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	
Further information on the measures to promote international technical and scientific cooperation.	
<p>Technical and scientific cooperation with other countries were carried out within the context of regional projects related to conservation and sustainable use of biodiversity in which Lebanon is a part:</p> <ul style="list-style-type: none"> - Along with Jordan, Syria and the Palestinian Authority, Lebanon is a partner in 'The Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East project'. This five-year project (1999-2004) is funded by the GEF and implemented by the Lebanese Agriculture Research Institute (LARI) and UNDP and brings together several international organizations. Implementing partners include several local academic and research institutions and NGOs. Many experts were involved in this project to characterize the floristic richness and study the genetic diversity and potential uses of selected species. The project aims at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing <i>in-situ</i> and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in the Beqa'a plain in Lebanon. The four participating countries exchange technologies, methodologies and information towards sustainable use of biological diversity. Several training sessions, workshops and thematic meetings were conducted at the regional level. - Lebanon is a partner in the MedWetCoast, a regional project that also includes Albania, Egypt, Morocco, the Palestinian Authority and Tunisia, and aims towards biodiversity conservation and proper management of coastal areas and wetlands. The regional component is managed and coordinated by the Regional Facilitation Unit (RFU) based in Tour du Valat in France. The MedWetCoast Lebanon project's overall development objective is to conserve globally endangered species and their habitats, recognizing nature conservation as an integral part of sustainable human development while improving the capacity of governmental and non-governmental agencies to address biodiversity conservation issues in two main sites, the Tyre Coast Nature Reserve and the Wetlands of Aamiq. The project in Lebanon is funded by the FFEM (Fonds Francais pour l'Environnement Mondial), managed by UNDP and the national executing agency is the MoE. - The 'Integrated Management of Cedar Forests in Lebanon in collaboration with other Mediterranean countries' covers Algeria, Cyprus, Lebanon, Morocco, Syria and Turkey. The project started in Lebanon in July 2004, is funded by the GEF, implemented by UNEP and executed by the MoE with the collaboration of the American University of Beirut. This three-year project aims at addressing the serious threat affecting 70% of the Tannourine –Haddath El-Jebbeh forest trees, one of the 12 surviving stands of cedar forests in Lebanon and also the largest. The main objective of this project is not only to identify the root causes of this environmental threat but also to elaborate an action plan for integrated management of this important site. 	

129. ■ On Article 18(4), has your country encouraged and developed methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention?	
a) No	
b) No, but relevant methods are under development	X
c) Yes, methods are in place	

130. ■ On Article 18(5), has your country promoted the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention?	
a) No	
b) Yes (please provide some examples below)	X

Examples for the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention.

A collaborative agreement between Lebanon and the Royal Botanic Gardens Kew provides grants to promote conservation and sustainable use of biodiversity and includes an element of technology transfer to partner countries. This partnership between Royal Botanic Gardens Kew and Lebanon/LARI, one of 15 partnerships of the Millennium Seed Bank (MSB) project, is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology.

131. Has your country established links to non-governmental organizations, private sector and other institutions holding important databases or undertaking significant work on biological diversity through the CHM? (decision V/14)	
a) No	
b) No, but coordination with relevant NGOs, private sector and other institutions under way	
c) Yes, links established with relevant NGOs, private sector and institutions	X

The following question (132) is for DEVELOPED COUNTRIES

132. Has your country further developed the CHM to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation? (decision V/14)	
a) No	
b) Yes, by using funding opportunities	
c) Yes, by means of access to, and transfer of technology	
d) Yes, by using research cooperation facilities	
e) Yes, by using repatriation of information	
f) Yes, by using training opportunities	
g) Yes, by using promotion of contacts with relevant institutions, organizations and the private sector	
h) Yes, by using other means (please specify below)	
Further comments on CHM developments to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation.	

133. Has your country used CHM to make information available more useful for researchers and decision-makers? (decision V/14)	
a) No	
b) No, but relevant initiatives under consideration	
c) Yes (please provide details below)	X
Further comments on development of relevant initiatives.	
The biodiversity and biosafety clearing-house mechanisms for Lebanon are under development and in process of finalization.	

134. Has your country developed, provided and shared services and tools to enhance and facilitate the implementation of the CHM and further improve synergies among biodiversity-related Conventions? (decision V/14)	
a) No	
b) Yes (please specify services and tools below)	
Further comments on services and tools to enhance and facilitate the implementation of CHM and further improve synergies among biodiversity-related Conventions.	
The CHM is not functional yet, it will be operational in the coming months.	

Box LVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Technical and scientific cooperation with other countries are carried out within the context of international agreements and regional projects related to conservation and sustainable use of biodiversity in which Lebanon is a part. Of these: The Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East project, MedWetCoast project, Integrated Management of Cedar Forests in Lebanon in collaboration with other Mediterranean countries, Millennium Seed Bank (MSB) project within the Partnership agreement between Lebanon and the Royal Botanic Gardens Kew/ UK, Development of National Biosafety Framework, Protected Areas Project, Camp Project....

The main outcomes: increased awareness, building capacities, establishment of CHM and websites; exchange of information and expertise, exchange of tools and materials, lessons learned, experience, methods of studying and assessing and site diagnosis; identification and monitoring, etc. These outcomes certainly supported Lebanese nature conservation authorities in the process of preparation of management plans, accompanying it with info -exchange and increasing know-how on particular issues, e.g. public involvement and socio-economic aspects of management of sites.

Actions undertaken in above section contribute to the achievement of Goal 2 of the Strategic Plan of the Convention, particularly with respect to an increase in the country potential for implementation of the priority tasks specified in the *NBSAP and its addendum*. Those activities will be an important step towards achievement of the "Target 2010", in particular with respect to general goals nos. 4, 5, 7, 8, 9 i 11. They are also an important contribution to achievement of the Millennium Development Goals.

The main constraint to effective implementation of projects related to international scientific and technological cooperation is:

- The difficulty translated by the scientists and researchers to modify their academic findings into practical and socio-economic aspects.
- Absence of coordinated national policy for international biodiversity conventions on cross-cutting issues affecting more than one Convention.
- Absence of developed national information sharing tools
- Lack of streamlined and harmonized reporting within and between the implemented projects.

Article 19 - Handling of biotechnology and distribution of its benefits

135. ■ On Article 19(1), has your country taken measures to provide for the effective participation in biotechnological research activities by those Contracting Parties which provide the genetic resources for such research?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive legislation are in place	
e) Yes, comprehensive statutory policy and subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative measures are in place	

136. ■ On Article 19(2), has your country taken all practicable measures to promote and advance priority access by Parties, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Parties?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive measures are in place	

Box LIX

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

The main outcomes are:

- Development of the first draft of the National Biosafety Framework, and establishment of the National Coordinating committee for Biosafety (the Biosafety Protocol of is in process of ratification) which adopted the precautionary principle in dealing with biotechnology, as there is still lack of reliable scientific data on biotechnology issues such as long-term effects. A Biosafety policy is under development and a Biosafety Act is under discussion.
- Development of the national biodiversity and biosafety clearing-house, by the Ministry of Environment, which will be operational soon and will promote information exchange and assist with the implementation of the CBD. The CHM were constructed with GEF funds: the biodiversity CHM through "the Top-Up Biodiversity Enabling activity Project" and the Biosafety CHM through the UNEP_GEF "National Biosafety Framework project" which were both executed by MoE and managed by UNDP_Lebanon.
- Development of a draft law on Access and Benefit sharing by the Ministry of Environment. According to the draft law, any scientific, medical, pharmaceutical, commercial, or legal results derived from the access to, use, research, experiments, and developments of the biological and genetic resources should be shared in a fair and equitable manner with the State and the local land owner or owners and communities whose biological and genetic resources were involved in the activity of the applicant. The sharing of such results shall be provided for in an Access and Benefit Sharing Agreement.
- Formulated proposal by the Agro-biodiversity project for the establishment of a national plant genetic resources programme in Lebanon. Its objective is to regulate the conservation and exchange of the national plant genetic resources by setting the scientific, administrative, institutional and legal framework for this sector, in the light of the international and regional relevant agreements and conventions that are ratified by Lebanon.
- Implementation of the bioprospection project which has allowed for exchange of plant material between a private academic institution in Lebanon "the American University of Beirut" (AUB) and two universities in the United States namely the Ohio State University)

and the University of Toledo. The project which is funded by Mercy Corps and was launched in 2001 for 5 years duration aims at relying on collaborative research, using biotechnology, to generate new plant-derived commercial products from indigenous Lebanese plants (biodiversity) and to diversify the agro-industrial portfolio in Lebanon.

- Signed agreements between ICARDA (International Center for Agricultural Research in the Dry Areas) and the following institutes in Lebanon, aiming at providing lands for operations, exchange of experiences, germplasms, technologies and data: Government of Lebanon (1977), LARI (1978, 1991, 1994), AUB (1991, 1999) and LU, Faculty of Agricultural Sciences (1994).

The issue of handling of biotechnology and distribution of its benefits depends to a large extent on observing intellectual rights and patenting by prospective users. In this regard, Lebanon has a law on protection of intellectual rights since 1924, and patents law with updates in 2000 but none of their articles has a specific mention to biotechnology. However, Lebanon is a signatory to the Paris Convention (London text), the Madrid Agreement for the Repression of False or Deceptive Indications on Goods (London text) and the Nice Agreement for the Classification of Goods and Services.

Application of laws of intellectual rights and patents, however, remains a serious problem in Lebanon, and pharmaceutical formulas or compounds are not patentable.

Despite the fact that the patents law covers micro-organisms and plant varieties, patenting of transgenic organisms which may constitute important threat to the environment remains an unrecognized issue. Modifications in the patents law should be considered in the light of the development that took place in this field in the recent decade and should be harmonized with the international legal regulations. This is necessary to solve a number of many essential ethic issues. As for the national law related to protection of intellectual property it should be modified according to recommendations of international organisations, e.g., UPOV (Union for the Protection of New Varieties of Plants).

The implemented actions primarily address Goals 3 and 4 of the Strategic Plan of the Convention, partially contribute to the 2010 Target through addressing important biotechnology potentials and dangers, and contribute to goal (1) *Eradicating poverty and hunger* and goal (7) *Ensure environmental sustainability* of the Millennium Development Goals.

The main constraints:

Inadequate capacity to act caused by institutional weaknesses, lack of human resources, Lengthy process for the endorsement of proposed legislation, Lack in law enforcement, lack of transfer of technology and expertise and lack of adequate scientific research capacities seriously impede the appropriate implementation of the Article 19.

Article 20 – Financial resources

Box LX.

Please describe for each of the following items the quantity of financial resources, both internal and external, that have been utilized, received or provided, as applicable, to implement the Convention on Biological Diversity, on an annual basis, since your country became a Party to the Convention.	
a) Budgetary allocations by national and local Governments as well as different sectoral ministries	<p>In 2001, the Government of Lebanon has allocated 17 Million USD for the execution of five years reforestation national programme in all Lebanese regions with the aims of increasing the green cover in Lebanon specifically in the degraded forests areas.</p> <p>The national reforestation programme is executed by MoE.</p>
b) Extra-budgetary resources (identified by donor agencies)	<p>The main source of funds received by Lebanon to implement the CBD was from the Global Environment Facility which provides the following funds to execute international projects:</p> <ul style="list-style-type: none"> - Biodiversity Country Study - Biodiversity Enabling Activity (including CHM support): National Biodiversity Strategy and Action Plan (NBSAP), and first National Report to the Conference of Parties (CoP): 154,500 USD - Top-Up Biodiversity Enabling Activity: Assessment of Capacity Building Needs and Country Specific Priorities in Biodiversity: 100,000 USD - Protected Areas Project: Strengthening of National Capacity and Grassroots In-Situ Conservation for Sustainable Biodiversity Protection: 2,500,000 USD - Biosafety Project: Development of the National Biosafety Framework for Lebanon: 160,000 USD - Agrobiodiversity Project (Regional): Conservation and Sustainable Use of Dryland Agrobiodiversity of the Near East: 1,500,752 USD - Integrated Management of Cedar Forests in Lebanon in cooperation with other Mediterranean Countries with particular emphasis on Tannourine-Hadath El-Jebbeh Cedar forest' : Regional budget: 1,212,000 USD, Lebanon part: 530,500 USD - PDFA funds for the project "Income generation through sustainable use of natural resources in Yammouneh": 25 000 USD - Medicinal Plants Project: Mainstreaming Biodiversity Management Considerations into Medicinal and Aromatic Plants Production Processes (PDF-B) in Lebanon and the Palestinian Authority: 323,775 USD - "Design, Testing and Evaluating of Best Practices for <i>in situ</i> Conservation of Economically Important Wild Species" (PDF_B) Regional: Lebanon part 30, 000 USD <p>In addition to the funds from the following donors:</p> <ul style="list-style-type: none"> - The "Fond Francais pour l'environnement mondial" (FFEM) for the MedWetCoast project - Ec_Life Third Countries for the Stable Institutional Structure for Protected Areas Management: "SISPAM" <ul style="list-style-type: none"> - GTZ for the project on Combatting Desertification in Lebanon" (CoDel). - RASMAR SMALL GRANT FUND for Economic viability study for the management of two sites: Aamiq marshes and Tyre Coast Nature Reserve in December 2004 - USAID funds through SRI for awarness and infrastructure activities in the nature reserves

c) Bilateral channels (identified by donor agencies)	
d) Regional channels (identified by donor agencies)	Lebanon has submitted to the Council of Arab Ministers Responsible for Environment (CAMRE) a proposal to establish an Arab Environment Facility (AEF) to secure funds for environmental projects in the Arab region. The proposal is awaiting approval by the (CAMRE). A round table was organized in Beirut in September 2005 to discuss the proposal during which regional channels were identified (Check box XXII below)
e) Multilateral channels (identified by donor agencies)	
f) Private sources (identified by donor agencies)	
g) Resources generated through financial instruments, such as charges for use of biodiversity	

Box LXI .

Please describe in detail below any major financing programmes, such as biodiversity trust funds or specific programmes that have been established in your country.

Lebanon has proposed the establishment of an Arab Environment Facility (AEF) to serve as Trust Fund for different environmental projects including biodiversity:

During the 30th meeting of the Executive Bureau of the Council of Arab Ministers Responsible for Environment (CAMRE) held in Beirut in June 2003, the director general of the Ministry of Environment has suggested 2 proposals:

- the establishment of the Arab Environment facility to fund environmental projects
- the empowerment of the private sector to invest in the various environmental fields.

Accordingly, Lebanon has submitted to the secretariat of CAMRE two concept papers about the proposed ideas.

During the 16th meeting of CAMRE held in Egypt in December 8, 2003, CAMRE considered the two concept papers prepared by Lebanon for the suggested proposals.

In the 32nd meeting of the Executive Bureau of CAMRE held in 26 September, 2004, Lebanon suggested to host a round table to discuss the proposals. CAMRE accepted the invitation.

In its 16th meeting held in December, 2005, the CAMRE issued a decision which approves the launching of the round table discussion in Lebanon, at Lebanon's earliest convenience.

Accordingly, Lebanon has hosted a round table in Beirut from 6 till 8 September, 2005; the event was organized by the Lebanese Ministry of Environment under the patronage of the Prime Minister and was attended by former UNEP executive director, former CEO of GEF, honorary chief officer for the multilateral fund of Montréal protocol (MLF), representatives from the CAMRE, relevant ministries in Lebanon, NGOs, academic institutions in addition to experts and interested stakeholders.

The workshop addressed the following issues:

- 1) Resources needed for the establishment of the Arab Environment facility (AEF) in terms of technical, financial, legal and human resources.
- 2) Ways and means needed for the empowerment of the private sector to invest in the various environmental fields in terms of developing and improving the Arab market for environmental consultancies and commitments, and through the establishment of a committee for the private environmental cooperation

Accordingly, the round table has elaborated a concept of a strategy for the establishment of the Arab Environment Facility which is awaiting approval from CAMRE and the Arab league.

Upon approval, a detailed action plan highlighting priorities and mechanism of the operation of the AEF will be elaborated.

137. ■ On Article 20(1), has your country provided financial support and incentives to those national activities that are intended to achieve the objectives of the Convention?	
a) No	
b) Yes, incentives only (please provide a list of such incentives below)	
c) Yes, financial support only	X
d) Yes, financial support and incentives (please provide details below)	
Further comments on financial support and incentives provided.	
<p>The five-year national reforestation programme currently executed by MoE is funded from the Government of Lebanon (17 Million USD).</p> <p>The Government of Lebanon is providing in-kind contribution and sometimes in-cash for all the projects executed by Lebanon in cooperation with international organizations and donors.</p> <p>The MoE is providing annual financial allocations for the nature reserves (approximately 380,000 USD distributed among six reserves) to contribute in the management costs of the reserves.</p> <p>The MoE is providing annual financial allocations for the NGOs to execute projects related to the environmental field including biodiversity (in the year 2001, the financial allocation was amounted to 467, 816 USD).</p>	

The next question (138) is for DEVELOPED COUNTRIES

138. ■ On Article 20(2), has your country provided new and additional financial resources to enable developing country Parties to meet the agreed incremental costs to them of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes (please indicate the amount, on an annual basis, of new and additional financial resources your country has provided)	
Further comments on new and additional financial resources provided.	

The next question (139) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

139. ■ On Article 20(2), has your country received new and additional financial resources to enable it to meet the agreed full incremental costs of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes	

140. ■ Has your country established a process to monitor financial support to biodiversity, including support provided by the private sector? (decision V/11)	
a) No	X
b) No, but procedures being established	
c) Yes (please provide details below)	
Further comments on processes to monitor financial support to biodiversity, including support provided by the private sector.	
<p>Monitoring of financial support is not done systematically. However, there are some internal procedures and rules at the MOE related to the monitoring of financial support provided by the donors for the implementation of international projects. According to these rules, the project focal point at the Ministry should ensure financial control and monitoring for the relevant project.</p>	

141. ■ Has your country considered any measures like tax exemptions in national taxation systems to encourage financial support to biodiversity? (decision V/11)	
a) No	
b) No, but exemptions are under development (please provide details below)	
c) Yes, exemptions are in place (please provide details below)	
Further comments on tax exemptions for biodiversity-related donations.	
Existing Laws highlight to some extent taxation measures on actions that would threaten biodiversity however they need review, update and enforcement.	
On the other hand, the law of the protection of environment (law 444/02) addressed the issue of financial taxation in article 4 while incentives measures were highlighted in article 20 for actions related to environment conservation.	
To note that law 444 stipulates general frameworks and guidelines, the development and issuance of implementation decrees are needed to tackle further the biodiversity components.	

142. Has your country reviewed national budgets and monetary policies, including the effectiveness of official development assistance allocated to biodiversity, with particular attention paid to positive incentives and their performance as well as perverse incentives and ways and means for their removal or mitigation? (decision VI/16)	
a) No	
b) No, but review is under way	
c) Yes (please provide results of review below)	X
Further comments on review of national budgets and monetary policies, including the effectiveness of official development assistance.	
Review of national budgets and monetary policies is being undertaken on annual basis. According to last review done in this regards, the Government is shifting its policy for the elaboration of the national budget from budget based on needs to a budget based on programmes.	
Biodiversity is integrated through the initiatives undertaken by the Lebanese government in relation to the allocation of annual funds for the management of Protected Areas and for NGOs or for the reforestation programme.	
Incentives measures were addressed in the law for the protection of Environment (law 444/02), in Chapter 3 article 20; however it needs the elaboration of the necessary implementation decree for the enforcement.	

143. Is your country taking concrete actions to review and further integrate biodiversity considerations in the development and implementation of major international development initiatives, as well as in national sustainable development plans and relevant sectoral policies and plans? (decisions VI/16 and VII/21)	
a) No	
b) No, but review is under way	
c) Yes, in some initiatives and plans (please provide details below)	X
d) Yes, in major initiatives and plans (please provide details below)	
Further comments on review and integration of biodiversity considerations in relevant initiatives, policies and plans.	
The MoE is continuously developing projects proposals related to the conservation and sustainable use of biodiversity and submitting those to relevant donors (Biodiversity projects implemented through international initiatives are mentioned in the Box LX above. Furthermore, biodiversity was included in many international projects dealing with the environment and development issues, as example: "Enhancement of Permanent Environmental Awareness at MOE" (EPEAU) project, SEA project, MSC-IPP project.	
As for policies and plans, MoE has reviewed or in process of reviewing many national policies and plans and has integrated biodiversity issues in those, for example: Law for protection of Environment (law 444/02), National Environmental Action Plan (under preparation by MSC_IPP project), SEA and EIA draft decrees, draft law for Coastal Areas management and local action plans for sustainable development of coastal areas (developed by CAMP project), Indicators developed under the LEDO,....	
Regarding other ministries, biodiversity was integrated in the following initiatives:	
MOA and LARI are developing and implementing projects with international organizations dealing	

with biodiversity conservation mainly the Agrobiodiversity project and the project on Combating Desertification in Lebanon" (CoDel) which issued the National Action Plan for Desertification in which biodiversity considerations were integrated.

The forest Resource Assessment (FRA) project funded by the FAO and executed by the MoA is building up a database on forest in Lebanon. The project is assessing all services and products provided by forests. A national forest policy will be developed further to the results obtained. In addition, monitoring and upgrading of the data obtained from the study would be done each five years.

In March 2002 the elaboration of the "Schema directeur d'aménagement du territoire" SDATL was initiated by DAR-IAURIF in collaboration with the MOE and the CDR and after two analytical phases related to diagnostic, problematic and potential scenarios for development and choices for strategies, the "schema d'aménagement du territoire" has been released in March 2004 but it's still awaiting official endorsement.

The objectives of this project was to elaborate on a national implementation framework for the schema d'aménagement du territoire in order to promote a balanced development opportunity all over the country while allowing optimal exploitation of natural resources and promoting environmental and national heritage conservation.

144. Is your country enhancing the integration of biological diversity into the sectoral development and assistance programmes? (decision VII/21)

a) No	
b) No, but relevant programmes are under development	
c) Yes, into some sectoral development and assistance programmes (please provide details below)	X
d) Yes, into major sectoral development and assistance programmes (please provide details below)	
Further comments on the integration of biodiversity into sectoral development and assistance programmes	

The next question (145) is for DEVELOPED COUNTRIES

145. Please indicate with an "X" in the table below in which area your country has provided financial support to developing countries and/or countries with economies in transition. Please elaborate in the space below if necessary.

A r e a s	Support provided
a) Undertaking national or regional assessments within the framework of MEA (decision VI/8)	
b) <i>In-situ</i> conservation (decision V/16)	
c) Enhance national capacity to establish and maintain the mechanisms to protect traditional knowledge (decision VI/10)	
d) <i>Ex-situ</i> conservation (decision V/26)	
e) Implementation of the Global Strategy for Plant Conservation (decision VI/9)	
f) Implementation of the Bonn Guidelines (decision VI/24)	
g) Implementation of programme of work on agricultural biodiversity (decision V/5)	
h) Preparation of first report on the State of World's Animal Genetic Resources (decision VI/17)	
i) Support to work of existing regional coordination mechanisms and development of regional and sub regional networks or processes (decision	

VI/27)	
j) Development of partnerships and other means to provide the necessary support for the implementation of the programme of work on dry and subhumid lands biological diversity (decision VII/2)	
k) Financial support for the operations of the Coordination Mechanism of the Global Taxonomy Initiative (decision VII/9)	
l) Support to the implementation of the Action Plan on Capacity Building as contained in the annex to decision VII/19 (decision VII/19)	
m) Support to the implementation of the programme of work on mountain biological diversity (decision VII/27)	
n) Support to the implementation of the programme of work on protected areas (decision VII/28)	
o) Support to the development of national indicators (decision VII/30)	
p) Others (please specify)	
Further information on financial support provided to developing countries and countries with economies in transition.	

The next question (146) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

146. Please indicate with an "X" in the table below in which areas your country has applied for funds from the Global Environment Facility (GEF), from developed countries and/or from other sources. The same area may have more than one source of financial support. Please elaborate in the space below if necessary.

A r e a s	Applied for funds from		
	GEF	Bilatera l	Other
a) Preparation of national biodiversity strategies or action plans	X		
b) National capacity self-assessment for implementation of Convention (decision VI/27)	X		
c) Priority actions to implement the Global Taxonomy Initiative (decision V/9)			
d) <i>In-situ</i> conservation (decision V/16)	X		
e) Development of national strategies or action plans to deal with alien species (decision VI/23)			
f) <i>Ex-situ</i> conservation, establishment and maintenance of <i>Ex-situ</i> conservation facilities (decision V/26)			
g) Projects that promote measures for implementing Article 13 (Education and Public Awareness) (decision VI/19)			
h) Preparation of national reports (decisions III/9, V/19 and VI/25)	X		
i) Projects for conservation and sustainable use of inland water biological diversity (decision IV/4)			FFEM

j) Activities for conservation and sustainable use of agricultural biological diversity (decision V/5)	X		
k) Implementation of the Cartagena Protocol on Biosafety (decision VI/26)	X		
l) Implementation of the Global Taxonomy Initiative			
m) Implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity			
n) Others (please specify)			
Further information on application for financial support.			

Box LXII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Lebanon as a country in transition has received substantial assistance from different donors mainly the GEF for the implementation of the CBD and other biodiversity related conventions and associated activities relevant to biodiversity conservation and sustainable use and capacity building. As a result the national capacity to mobilize necessary funds increased as well.

As for national funds, the government is allocating within its annual budget funds for concerned institutions to execute activities related to the conservation and sustainable use of biodiversity, however nature protection was not among the priorities for budgetary allocations. Accordingly, the systematic implementation of the NBSAP faced obstacles due to the lack of necessary financial resources. However, Still Lebanon hosts large biodiversity that is mainly protected and managed with financial assistance from bilateral and multilateral sources.

The actions undertaken contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.

Furthermore, Lebanon has not promoted the establishment of other incentives in order to facilitate broader support from private persons and enterprises. Mostly it is due to willingness of Government to secure government budget income in order to ensure economic development and prosperity of the country. At the same time, private enterprises and persons are willing to donate money for nature protection purposes.

All the measures taken are consistent with the Strategic Convention plan, 2010 Target and Millennium Development Goals as well as with the targets adopted in the national Strategy and Action Plan for conservation and sustainable use of biological diversity and in other All-Lebanon and sectoral documents.

The need for continued investment into biodiversity conservation and the need for long-term sustainable financing strategies constitute the main constraints.

D. THEMATIC AREAS

147. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the thematic programmes of work of the Convention (marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, inland waters biodiversity, dry and sub-humid lands and mountain biodiversity).

3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Programme of Work					
	Agricultural	Forest	Marine and coastal	Inland water ecosystem	Dry and subhumid lands	Mountain
(a) Lack of political will and support	3	3	3	2	2	3
(b) Limited public participation and stakeholder involvement	2	2	3	2	2	2
(c) Lack of mainstreaming and integration of biodiversity issues into other sectors	3	2	3	3	2	2
(d) Lack of precautionary and proactive measures	2	2	2	2	3	3
(e) Inadequate capacity to act, caused by institutional weakness	2	3	2	2	3	3
(f) Lack of transfer of technology and expertise	1	1	1	1	1	1
(g) Loss of traditional knowledge	1	2	1	1	3	2
(h) Lack of adequate scientific research capacities to support all the objectives	2	2	2	3	1	2
(i) Lack of accessible knowledge and information	2	1	2	3	1	1
(j) Lack of public education and awareness at all levels	2	2	2	3	2	2
(k) Existing scientific and traditional knowledge not fully utilized	2	2	3	2	2	2

(l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	2	2	2	2	1	2
(m) Lack of financial, human, technical resources	2	2	3	2	3	3
(n) Lack of economic incentive measures	3	3	3	3	3	3
(o) Lack of benefit-sharing	2	3	2	2	3	3
(p) Lack of synergies at national and international levels	1	2	2	2	2	2
(q) Lack of horizontal cooperation among stakeholders	2	2	3	2	2	3
(r) Lack of effective partnerships	2	3	2	1	3	3
(s) Lack of engagement of scientific community	2	2	2	2	1	2
(t) Lack of appropriate policies and laws	2	3	2	2	2	3
(u) Poverty	2	3	2	2	3	3
(v) Population pressure	2	3	3	2	3	3
(w) Unsustainable consumption and production patterns	3	3	3	3	3	3
(x) Lack of capacities for local communities	2	2	3	2	2	2
(y) Lack of knowledge and practice of ecosystem-based approaches to management	2	3	3	3	2	3
(z) Weak law enforcement capacity	3	2	3	3	3	3
(aa) Natural disasters and environmental change	1	2	2		1	1
(bb) Others (please specify)						

Inland water ecosystems

148. Has your country incorporated the objectives and relevant activities of the programme of work into the following and implemented them? (decision VII/4)				
Strategies, policies, plans and activities	No	Yes, partially, integrated but not implemented	Yes, fully integrated and implemented	N/A
a) Your biodiversity strategies and action plans		X		
b) Wetland policies and strategies		X		
c) Integrated water resources management and water efficiency plans being developed in line with paragraph 25 of the Plan of Implementation of the World Summit on Sustainable Development		X		
d) Enhanced coordination and cooperation between national actors responsible for inland water ecosystems and biological diversity	X			
Further comments on incorporation of the objectives and activities of the programme of work				
<p>In 2002, the CAMP project has developed an integrated master plan for the Damour river basin from source to outfall including water and conservation issues.</p> <p>In light of Lebanon's commitment to the Ramsar Convention on a national scale, the Ministry of Environment in Lebanon has made several important steps including: adopting the regional MedWetCoast initiative which represents a regional project and preparing a national wetland strategy and policies, formulating national wetland strategies and policies and adopting the Ramsar Small Grant Fund Project.</p> <p>The Ramsar Small Grant Fund Project (RSGF) is an extremely crucial continuation of the efforts already in progress by the Ministry of Environment for the conservation of wetlands in Lebanon and their economic sustainability. The RSGF addresses the economic viability and evaluation of Tyre Coast Nature Reserve and Aammîq Wetland, which is an essential building block for the management, and sustainability of the two sites that are in fact the two sites where the MedWetCoast Project is currently being implemented. Furthermore, all the outputs of the RSGF project perfectly complement the management activities within the MedWetCoast Project for both sites.</p> <p>The MedWetCoast Project has developed comprehensive management plans for both Tyre Coast Nature and Aammîq Wetland as well as simultaneously implemented several activities within the plans that focused on the following axes:</p> <ol style="list-style-type: none"> 1. Conservation 2. Awareness 3. Eco-tourism 4. Social development and local integration 5. Cultural heritage 6. Financial sustainability 7. Technical sustainability <p>Within the MedWetCoast Project site diagnosis studies were conducted for both Tyre Coast Nature and Aammîq Wetland covering biological diversity of each site.</p> <p>Furthermore, the MedWetCoast Project developed many local, national and international partnerships and collaborations to ensure the technical and sustainability of the sites included A-Rocha, SPNL, Healthy Basket, World Vision, Lebanese-Canadian Bank, Agrobiodiversity project, Methyl bromide project and Medasset.</p> <p>The NCSR has carried out some studies on macrophytes in Litani River and Aammîq wetland. A research was conducted in 2004-2005 by the MNCSR and the LU with funds from CNRS and Syrian University. This research aimed at studying and characterizing all fish species in the Lebanese fresh water especially in Naher el Assi and to assess their biodiversity, population dynamic, sexual cycle and dietary regime especially for the trout arc en ciel</p> <p>A regional technical seminar on national strategies and policies for wetlands in 2004 within the MedWetCoast regional seminars organized in the context of the capacity building component in an effort to facilitate exchange of experience and expertise across the Mediterranean on wetland and</p>				

coastal issues, thereby 'closing the Mediterranean circle'. The seminar aims at providing the participating target countries with the necessary elements to launch and/or strengthen a national policy making process to develop and, later, implement national wetlands policies. More specifically, the seminar:

- presented the guidelines of the Ramsar Convention for the preparation, development and implementation of national policies for wetlands
- presented national experiences of a number of countries, preferably Mediterranean countries, with the process of development of national policies and strategies for wetlands;
- reviewed the status of national wetlands policies in the MedWetCoast countries ; and
- in each of the MWC countries, layed the steps for initiating a process of developing and/or strengthening national wetlands policies and/or strategies.

Within the framework of the MedWetCoast Project a background paper for the development and implementation of a National Wetlands Policy in Lebanon was prepared.

The SPNL (NGO partner of BirdLife International) is promoting the IBAs concept for soaring birds' conservation through a regional project seeking the conservation of soaring birds and their habitats throughout their range, including the breeding grounds in the north and the wintering quarters in the south, by focusing its intervention on a key and highly vulnerable part of the range.

To note that some aquaculture private initiatives have been supported by the MOA such as in Assi river, Akkar, Baskinta, Rachine, Anjar and other fifty other farms in the Beqaa. .

149. Has your country identified priorities for each activity in the programme of work, including timescales, in relation to outcome oriented targets? (decision VII/4)

a) No	x
b) Outcome oriented targets developed but priority activities not developed	
c) Priority activities developed but not outcome oriented targets	
d) Yes, comprehensive outcome oriented targets and priority activities developed	

Further comments on the adoption of outcome oriented targets and priorities for activities, including providing a list of targets (if developed).

150. Is your country promoting synergies between this programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level? (decision VII/4)

a) Not applicable (not Party to Ramsar Convention)	
b) No	
c) No, but potential measures were identified for synergy and joint implementation	
d) Yes, some measures taken for joint implementation (please specify below)	x
e) Yes, comprehensive measures taken for joint implementation (please specify below)	

Further comments on the promotion of synergies between the programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level.

Cooperation between CBD and Ramsar focal points in Lebanon is very close, as the same institution (Ministry of Environment) is responsible for implementation of both Conventions.

The implementation of the MedWetCoast project by the Ministry of Environment which is a Mediterranean initiative under the Ramsar Convention promotes synergies with the CBD programme of work since the project aims at conserving globally endangered species and their habitats recognizing nature conservation as an integral part of sustainable human development while improving the capacity of governmental and non-governmental agencies to address Biodiversity in –

situ conservation issues and management of two main sites: The Tyre Coast Nature Reserve and the Wetland of Aamiq.

As case-study for initiatives undertaken by NGOs to promote the CBD inland water programme of work and related activities under the Ramsar Convention, is an initiative carried out for the conservation of a marshland in Bekaa valley by a national NGO the Society for the Protection of Nature in Lebanon-SPNL which is a partner for Birdlife international :

Kfar Zabad wetland is a small marshland on the level plain of the Bekaa Valley (part of the Syrian-African Great Rift Valley) which is the main migration route for African-Eurasian water birds through the Near East), surrounded by steep dry mountain slopes to the east and by agricultural land in other directions. Through SPNL research and field visits, several globally and regionally threatened bird species have been recorded breeding or using this site, such as Black Stork, Great Snipe and Syrian Serin (a restricted-range species), as well as several biome-restricted species, which makes its declaration as an IBA and a Ramsar site a high possibility.

The population of Kfar Zabad accounts to around 10 thousand people, from the Christian and Muslim religions. The village is characterized with low population emigration rate, and high poverty where a large percentage of the population depend on agriculture for income. The wetland was under heavy pressure from human practices; mainly from intense shooting, uncontrolled grazing, dumping of garbage, mis-use and overuse of agrochemicals, and man-induced drying/reclamation of the marshland and the erection of power-line towers over the marshland which might constitute a potential hazard for soaring migratory birds.

The site is a public land, and the municipality is enthusiastic to preserve it for nature, birds, and people. It was declared as Hima based on the suggestion of SPNL through Municipal Council Decisions and banned bird hunting in the area.

SPNL has already initiated site support groups-SSGs from the local community of the village. The members of the SSG had an introductory training on guiding techniques in nature, on Bird Identification and management of the site. This was further supported by awareness material clarifying the diversity of bird species, benefits of IBAs to people, and the sustainable use of marshlands. To raise the value of the site, the AEWA 10th anniversary at Kfar Zabad marshland on the 9th of April, which was characterized with high participation from school students, and the attendance of over 1000 people from other municipalities.

To ensure the sustainability of conservation activities initiated in Hima Kfar Zabad wetland through ecotourism income-generating activities, a small visitor center is under construction with several activities for children, picnic area, camping, etc. located at the entrance of the Hima.

151. Has your country taken steps to improve national data on: (decision VII/4)

Issues	Yes	No	No, but development is under way
a) Goods and services provided by inland water ecosystems?			x
b) The uses and related socioeconomic variables of such goods and services?			X
c) Basic hydrological aspects of water supply as they relate to maintaining ecosystem function?	X		
d) Species and all taxonomic levels?	X		
e) On threats to which inland water ecosystems are subjected?	X		

Further comments on the development of data sets, in particular a list of data sets developed in case you have replied "YES" above.

Two years ago (starting 2003) a task force headed by the NCSR has been initiated to gather scientists and hold regular meetings on purpose of collecting information and coordinate planning to avoid biasness and duplication of work.

Regarding socio-economic value, some initiatives are under development in this regards:

The NCSR is currently carrying out a study about the economic benefit of the sponges.

Within the Ramsar Small Grant Project, business plans were developed for both Tyre Coast Nature and Aammiq Wetland with the vision that the plans must contribute to the financial sustainability for the each wetland's conservation and implementation of its management plan by focusing on three

fronts: (i) Tourism development and expansion in and around the site with a feasibility study on an eco-tourism package, (ii) Agriculture development and expansion in each site with feasibility studies on organic farming and (iii) Business plans for the management plans for each site.

Regarding hydrological aspect of water supply:

The NGO, A Rocha Lebanon has highly contributed to the conservation of the water resources in Aammiq Wetland. A Rocha Lebanon has conducted several studies on the water resources in the area, developed the first phase of a hydro-geological monitoring program as well as installed the structures for the monitoring program on site that includes: 12 piezometers, 6 gauging boards, 2 shallow wells, 3 deep wells and 2 weirs. As a follow up to the efforts of A Rocha Lebanon, the management team in Aammiq Wetland has been conducting weekly water monitoring of all the aforementioned water levels in surface water bodies, piezometers and water wells.

As a follow up to the work initiated, the MedWetCoast Project is planning to execute a new study that involves identify the most proper location and design of a borehole that will answer the following questions:

1. Identify the connectivity between the surface water and groundwater
2. Identify the underground water regime of the marsh (water level throughout the year)

Regarding national data on species:

within the Protected Areas Project, four nature reserves in addition to one wetland (Aammiq marsh) were subject to biodiversity surveys and assessment in order to generate and update data on the species that they harbor:

The National Council for Scientific Research (NCSR) has completed in 1999 surveys of flora and fauna in the five sites. The NCSR has been also coordinating with the Green Line NGO for the identification of indicators for the monitoring program.

The Lebanese University has conducted since 2003 till 2005 a biodiversity assessment and monitoring in Ammiq marshes in addition to the four nature reserves, as a second phase of the field studies that was conducted by the NCSR.

Regarding threats to which Inland Water Ecosystem are subject, they were mentioned in the final report of the Lebanese University on biodiversity Assessment and Monitoring as follows:

- Degradation, fragmentation and destruction of habitats
- Pollution, garbage and pesticides
- Water over-exploitation, drainage and exaggeration in digging of wells.
- Extension of agriculture Areas
- Deliberate killings
- Decreased food availability
- Sensitivity to human disturbance

152. Has your country promoted the application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems? (decision VII/4)

a) No, the guidelines have not been reviewed	x
b) No, the guidelines have been reviewed and found inappropriate	
c) Yes, the guidelines have been reviewed and application/promotion is pending	
d) Yes, the guidelines promoted and applied	

Further comments on the promotion and application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems.

Apart from the national report about biodiversity released by the MOA in nine volumes in 1996, there have been no comprehensive national inventories about species of fresh water however the lists of species mentioned in the report are quite updated.

In addition, in 2004 the Ministry of Environment in collaboration with the Lebanese University used the rapid assessment method to assess and monitor the biodiversity harbored in Aammiq Wetland which was described by MedWetCoast as 'Site Diagnosis'.

A Rocha Lebanon, has had a consistent presence in Aammiq Wetland since 1996, during which they have conducted several studies, surveillance and monitoring of the biodiversity found in the Wetland and surrounding fields and hillside.

A study funded by NCSR and conducted in collaboration with Marseille University dealing with the macrophytes of fresh water and their classification as bioindicators. Part of this study was

incorporated and detailed in the Assessment and Monitoring study that was implemented by the MoE in collaboration with the Lebanese University and funded by GEF.

Box LXIII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Preparation of a background paper as a step towards the development of an Action Plan for inland freshwater has led to better coordination of protection in the country.

Inventory of Lebanese wetlands is in progress as it is conducted by the MedWetCoast Project and the Partner of BirdLife International within the framework of the IBAs programme (IBAs identification). This has led to better information on important wetlands in Lebanon and subsequent establishment of protected areas. As for strengthening and involving NGOs in the water management policy in Lebanon, this is done through the managing committees which encompass representatives from local communities and NGOs.

Actions undertaken and described in above section contribute to the achievement of Goals 1 and 2 of the Strategic Plan of the Convention.

Lebanon is rich in water but unfortunately the latter is not well managed. Hence there is a need to take care of water resources and water ecosystems, as well as biological diversity. Within this context three projects (Protected Areas Project, MedWetCoast and CAMP Project) are undertaking various activities, which are to protect and enable sustainable use. The most important ones include the following:

- Integrated Water Resources Management
- Integrated River Basin Management
- development, support and implementation of scientific research, international cooperation and technology exchange, which help protect water and its ecosystems
- Implementation of surface water and biological diversity monitoring and assessment systems
- Promotion and support of traditional forms of water use: fishing, tourism, recreation
- Promotion and support of activities, which lead to reduction in water pollution
- Restoration of natural sequences of habitats and ecological processes

The above activities lead, in surface waters and their ecosystems, to fulfillment of targets resulting from the Biological Diversity Convention, as well as to achievement of the goals of the Strategic Plan of the Convention and to improvement in achieving the "2010 goals". These activities contribute to achievement of the Millennium Development Goals in the areas of river basins, particularly to guarantee their sustainable development.

Constraints encountered in implementation are mainly caused by:

- Lack of comprehensive local integrated area management concept and legislation;
- Fragmented and overlapping responsibilities;
- Old legal and regulatory framework;
- Civil Service staff limitations;
- Freshwater pollution risks and public health hazards;
- Need for technical assistance and capacity building.

Marine and coastal biological diversity
General

153. Do your country's strategies and action plans include the following? Please use an "X" to indicate your response. (decisions II/10 and IV/15)	
a) Developing new marine and coastal protected areas	X
b) Improving the management of existing marine and coastal protected areas	X
c) Building capacity within the country for management of marine and coastal resources, including through educational programmes and targeted research initiatives (if yes, please elaborate on types of initiatives in the box below)	X
d) Instituting improved integrated marine and coastal area management (including catchments management) in order to reduce sediment and nutrient loads into the marine environment	X
e) Protection of areas important for reproduction, such as spawning and nursery areas	X
f) Improving sewage and other waste treatment	X
g) Controlling excessive fishing and destructive fishing practices	X
h) Developing a comprehensive oceans policy (if yes, please indicate current stage of development in the box below)	X
i) Incorporation of local and traditional knowledge into management of marine and coastal resources (if yes, please elaborate on types of management arrangements in the box below)	X
j) Others (please specify below)	
k) Not applicable	
Please elaborate on the above activities and list any other priority actions relating to conservation and sustainable use of marine and coastal biodiversity.	
<p>a) Strategies and action plans related to the marine ecosystems were addressed within the national biodiversity strategy and action plan (NBSAP), the project for the preparation of a Strategic Action Plan for the Conservation of biological diversity in the Mediterranean Region (SAP_BIO), and the CAMP Project:</p> <p>a.1) The NBSAP has set two objectives for the marine biodiversity under which many priority actions were identified as follows:</p> <p>Objective 1: Protect coastal and marine Ecosystems and biodiversity:</p> <p>Actions:</p> <ul style="list-style-type: none"> - Identify hot spots and land based sources of pollution in addition man caused maritime sources of pollution such as petroleum - Limit further industrial development on the coast - Introduce incentives for a clean industry and legislate polluter pays principle - Conduct EIA surveys prior to construction of treatment plants - Develop national action plan within the framework of Mediterranean action plan - Conduct a comprehensive survey to assess the situation of the coastal zone and review land use map and legislation - Enhance law enforcement authorities and put in place a coordination mechanism, introduce the concept of environmental police - Establish contingency plans to combat pollution or mitigate their harmful effects - Organize a network of observation stations center around the national center for marine sciences or the NCSR and assist in the rehabilitation of research centers in general - Develop partnerships and coordinate action with public and private sector and conduct public awareness campaigns - Integrate action with international activities and pool expertise - Establish nature reserves and marine parks representing major ecogeographical areas 	

- Develop an environmental monitoring program for pollutants and other bio -indicators

Objective II: Use marine and coastal resources in a sustainable manner by creating partnerships with stakeholders particularly the local communities

Actions:

- Enhance the economic impact of monitoring programs such as coastal quality monitoring for bacterial indicators, in order to enhance the market value of the local beaches and produce
- Study the fishing sector scientifically (practices, needs, potential, and stocks)
- Develop new legislation or update existing ones regarding fishing periods, fishing technology, gear ... to protect turtles and marine mammals
- Identify all types of traditional industries such as salt production and sponge fishing
- Create partnerships with local population particularly fishermen and municipalities
- Develop training programs and awareness campaigns
- Compile an updated national database of local biotopes, flora and fauna. Specify species that are underutilized or with potential for economic impact
- Highlight the unique nature of terraces and the coastal historical settlement sites (ex sites used for the manufacture of stone tools in Rauche)
- Study the potential of marine fresh water sources
- Develop new sectors such as mariculture in order to improve employment condition of marine operators including fishermen (cooperatives)
- Highlight the culture, traditional, and artistic significance of the sea by encouraging non-destructive traditional sports
- Put in place a coordinating mechanism for stakeholders

a.2) Within "the project for the preparation of a Strategic Action Plan for the Conservation of biological diversity in the Mediterranean Region (SAP_BIO)" (UNEP/MAP- RAC_SPA), the Ministry of environment has prepared with the collaboration of national experts five action plans in this regard namely:

I- Action Plan 1: Establishment of Conservation Strategies for Coastal Habitats:

Actions:

- Protection of terraces
- Protection of remaining sand beaches and dunes
- Protection of river mouth habitats
- Impact of fishing techniques on fish species and population dynamics

II- Action Plan 2: Develop and update National legislation related to the conservation of marine and coastal biodiversity:

Actions:

- Review the existing national legislation related to the coastal use
- Develop legislation for the conservation of the marine fauna and flora specially cetaceans, marine turtles and significant floral species
- Establishment of marine and coastal protected areas and develop legal measures for the assessment of impacts from coastal development and to control human activities having adverse impacts on marine vegetation
- Review, develop and /or and update national legislation related to invasive species
- Review international Conventions and agreements related to biodiversity and the protection of the Mediterranean sea from pollution; and develop accordingly related national legislation
- Review national legislation and set criteria for the establishment of marinas

III_ Action Plan 3: Organisation of Awareness Campaigns for the Lebanese Coastal Communities and the public sector

Actions:

- Develop and disseminate information material and guidelines
- Develop and market bird watching/monitoring activities
- Support marine turtles awareness programs
- Support/replicate existing facilities that inform the public on marine wildlife
- Launch and interactive website on marine wildlife and ecology

IV- Action Plan 4: Permanent Monitoring of the marine biodiversity:

Actions:

- Permanent Monitoring of the biodiversity through the bioindicators methods

- Permanent Monitoring of the two endangered marine turtles species: *Caretta Caretta* and *Chelonia mydas*
- Permanent Monitoring of the two species *Cymodocea nodosa* and *Halophila stipulacea*
- Permanent Monitoring of populations dynamics through underwater visual census UVC technique

IV- Action Plan 5: Develop physical parameters to the sea

a.3) Within the Camp project a strategy based upon the principles of sustainable development, applying the methodology of ICAM was developed to address the conservation of natural coastal resources in favor of the economic and social development activities of the area in Lebanon.

Furthermore, and in relation to marine habitats protection, the MNCSR has conducted in 2003 a study all over the Lebanese coast about the geomorphology, geography and ecosystem biocenose and biodiversity of fauna and flora present in defined marine sites within the framework of SAP-BIO. In 2004, the CNRS has elaborated a strategy whereby defined areas presenting significant biodiversity, turtles and terraces were suggested to be protected. In 2004-2005 marine terraces were protected within the frame of the RAC/SPA regional funded project.

However a more detailed study was needed and for that sake, the NCSR has developed a science technology innovation policy (STIP) based on inputs and discussions of several researchers and experts (more than 100) from different research or academic institutions. This strategy is a 5-year planning strategy that will be released and adopted in November 2005. It will delineate the scope of work for various scientific domains for the next 5 years as well as mechanisms needed to promote the establishment of an effective pool of scientific research studies done or planned to be done by various researchers in order to elaborate a sound basis for planning and conducting researches; sharing information and expertise and avoiding duplication. In addition, the pursued outcomes from the implementation of this strategy are as stated above mainly related to alienation of efforts deployed in science and to the elaboration of a sound vision in a way that might be defined as easy and effective to mainstream the scientific results into national strategies and policies.

b) In relation to the improvement of the management of existing marine and coastal protected areas, various studies and researches have been formulated, and the information to be gathered will be of significance for both the planning of nature conservation and the exploitation of natural resources. Of these projects:

- The MedWet Coast Project has developed and implemented a management plan for the Tyre Coast Nature Reserve and the PAP a management plan for PINR. The implementation action includes conservation, rehabilitation awareness, social development etc.

-In 2005-2006, a study about sponges is planned to be implemented by the MNCSR with co-funds from the LNCSR and a Syrian university. The aim of this study is to assess and define the species of sponges present along the Lebanese-Syrian coast, make necessary cultivations and study the diseases that affect them. The results would help in using the identified sponges as bioindicators to heavy metal concentration in related marine habitats and on the other hand the success of sponging techniques may promote an income generation source for interested investors.

-In 2005-2006, a project funded by the LU is being implemented by the MNCSR and LU aims at assessing the dietary regime of some fish species all over the Lebanese coast.

- In September 2005, a PhD thesis about nematodes was submitted to the MNCSR and LU within the frame of a project funded by CEDRE and AUF for 3 years (2003-2005). The study aimed at assessing and characterizing nematodes' species, assessing and defining their role as bioindicators in the eastern Mediterranean basin. Further and within the same scope, there is a proposal under preparation by the NCSR and LU aiming at surveying sites all over the Lebanese coast for 2 years.

- A study funded by ACCOBAMS in collaboration with MONACO deals with the dolphins' characterization, observation, presence and their photographic related techniques. For that regard, The MNCSR was appointed for the monitoring of the *Cetacean* species in June 2005 and in this regard, trainings are being attended and equipments are being requested.

-Regular monitoring is being conducted in regards to water pollution all over the Lebanese coast and results are being broadcasted in scientific newspapers.

-Within the frame of MedWetCoast project, a project related to turtles' tagging has been launched whereby daily monitoring on their presence and hatching during the breeding seasons are done.

-Within the frame of MedWetCoast project, ecological monitoring plans are elaborated for Tyre coast Nature Reserve; zoning plans have been developed by IAURIF; in-situ conservation and sustainable use of resources have been promoted through building the capacity of local communities and integrating organic farming practices in the area.

- A marine resources and coastal zones department was launched in the institute of environmental studies of a private academic institution (Balamand university). This institute is still in the birth stage and projects carried out are thesis projects not yet finalized; examples of such projects are: assessment of commercial fish species; listing of cartilaginous fishes; assessment of the pollution of the marine environment; setting environmental indicators; tagging of marine turtles; establishment of a museum of most common species and an educational aquarium for promoting awareness about marine life among schools' students.

c) In relation to the capacity building deployed for the management of marine and coastal resources:

- The national action plans related to the conservation of marine and coastal biodiversity developed by the Lebanese Ministry of Environment in 2002 within the context of the Strategic Action Plan for the conservation of the coastal and marine biodiversity in the Mediterranean (SAP_BIO project), adopted several Action Plans, one of which is to Provide necessary capacity building and necessary equipments for the local authorities to protect important marine natural sites. Moreover, capacity building is also done via consultation on scientific projects related to the work of some NGOs or schools.

- Capacity building for the management of marine and coastal resources to ensure their sustainability was undertaken by the MedWetCoast project. The project trained the trainers for monitoring purposes. Promotion and capacity building for the development of national policies and tools to address the policy-related root causes of loss of wetland and coastal biodiversity constitutes one of the objectives of the MedWetCoast Project.

Examples of the training sessions conducted by the project in relation to capacity building are as follows:

- Training to the all the protected areas management teams and committees and concerned ministries about management planning.
- Management planning training for nature reserves staff.
- The MedWetCoast Project has developed in collaboration with ATEN a training program to improve the management of Tyre Coast Nature Reserve. At the present 75% of this plan has been implemented.
- Necessary capacity building and training were provided by The MedWetCoast Project to interested local people and managing teams of PINR and TCNR on marine turtles monitoring to enable them to work as guides and participate in the implementation of ecotourism activities in the reserves.
- An eco-guide training program was conducted to train people from the local community to become guides in the protected areas. (May/June 2005) in addition to a tour organized for tour operators in five nature reserves among which the two coastal and marine nature reserves of Palm Island and Tyre Coast to promote ecotourism in these areas.
- Awareness campaign for decision makers about wetlands policies and strategies and the importance of wetland (Planned activity)
- Awareness campaign for kiosk owners along the coast in Tyre nature reserve and for the coast cleaners for the conservation of the reserve and the coastal ecosystem

- Under the Protected Areas Project, many training workshops were carried out since 1997 till 2005 to the management teams of the Palm Islands Nature Reserve which contributed tremendously to the capacity building need. Examples of these workshops are as follows:

- The first Training Workshop on Protected Areas Management. Ministry of Environment/ UNDP/ IUCN: 23-30 Oct. 1997
- Second National Workshop on Biodiversity, Ministry of Environment/ UNDP: 17 Nov., 1998
- Fauna Monitoring Training Workshop, Greenline, EPC: 2 Dec., 1999
- Protected Areas Visitor Management Workshop, : 18-22 April, 2000.
- Sustainable Development, case study of Palm Islands Nature Reserve: 8 July., 2000.
- Restoration of marine protected areas, case study of Palm Islands Nature Reserve: 29 Oct., 2000.
- Economic assessment of resources in marine protected areas, case study of Palm Islands Nature Reserve: 4 Nov., 2000.
- Workshop on Collaborative management of Protected areas, including Palm Islands Nature Reserve. Byblos: 14-17 Nov., 2000.
- Workshop on Ecotourism in Protected Areas. Tripoli: Dec., 2000.
- Natural and Cultural Heritage Interpretation and Evaluation Training Workshop. Victoria, 25-27 Sep., 2002. Lecture on Birdwatching as a tool for interpretation and monitoring.

- The Environment Information Center (EIC)/SPNL conducted on behalf of the PAP project a workshop for fishermen of Tripoli in 2001 to raise on one side their awareness about the sustainable use of fish and the protection of turtles and sea mammals; and on the other side to improve the skills of the management team who energetically inter-acted with fishermen as true stakeholders. Moreover, the Greenline NGO also conducted in 1999 on behalf of the MOE a field training at PINR on monitoring of birds, plants, mammals and reptiles; whereas, the Royal Botanical Garden Kew (England) has conducted in 2002 a workshop on PINR to build capacities on taxonomic practices for the management team of the reserve.
- The Darwin Initiative project on coastal vegetation (1999-2002) has conducted a training workshop to build capacities on taxonomic practices for various stakeholders as well as management teams of the nature reserves in Lebanon.
- A regional project funded by FAO and implemented by the MOA and meant to assess the carrying capacity of the sea in terms of the fish catch rate and fishing effort in order to define various indicators for example the number of additional fishing vessels needed. Within the frame of this project, a workshop would be devised for training the local communities on how to make the census, identify fish and define the convenient boats for each type of fish.
- Besides, what is worthy to be mentioned is that new draft curriculum is integrating relevant topics about marine biodiversity in consultation with the experts of the marine center and Ministry of Education. However, there are no helpful activities in the sphere of education in this matter.

d) Since Lebanon geography presents open bays, sediments are not yet a case for deepened studies. Instead, it is believed that the uncontrolled and unlicensed excavations carried out along rivers' sides and the erosion phenomena which are negatively impacting on the marine ecosystems should be addressed. So far, integrated management of coastal zone has been considered purely theoretically in some scientific milieus, however it has not been properly implemented yet.

e) In relation to the protection of areas important for reproduction:

There is no strategy elaborated in this regard however throughout the protected areas project implemented by the MOE, some protection is being devised; also through specific projects, protection of marine sites is being enhanced; for example, the MedWetCoast project has instated strict protection measures on the nesting beaches of sea turtles in Tyre Coast Nature Reserve. There also plans to create no take fishing zones in the areas extending from the south of Litani to Naqoura (on the Southern Coast of Lebanon).

In addition, the Government of Lebanon has ratified the ACCOBAMS "Agreement on the Conservation of Cetaceans of the Black sea, Mediterranean sea and Contiguous Atlantic Area" in 2004 through law no. 571 thus Lebanon has to fulfill the requirements of the agreement and in this frame; a national report has been prepared.

There is still lack in human and financial resources to identify fish spawning grounds and areas important to marine mammals; and to promote identification and monitoring of species.

f) In relation to sewage and waste treatment:

- In Lebanon, thirteen waste water treatment plants are planned to be established in important cities all along the coast, among these potential stations only one has been installed and operating since several years and is being subject to technical and mechanical improvements.

- A Hazardous Waste Program was developed in 2001-2002 by MOE with the assistance of METAP: The project was responsible for reviewing existing studies on hazardous waste at the MOE in order to provide accurate information about the nature and source of hazardous waste, particularly those related to industrial and agrochemical waste.

The program has developed legislation and provided assistance to industry by proposing guidelines for hazardous waste disposal. The program has developed three decrees related to "medical waste, industrial and hazardous waste, and permitting and authorization dealing with hazardous waste".

- A Project for Strengthening the Permitting and Auditing System for Industries "SPASI" was executed by MoE with EU funds between February 2000 and May 2002:

Main outputs of this project include the development of decrees and regulations aimed at strengthening the permitting and auditing system for industry as well as the formulation of appropriate standards.

The project has established National Standards for environmental quality for stack emissions and wastewater (discharge to the sea, surface water, sewer network). These standards have been issued by MOE (Decision #8/1, 2001) and will be introduced on a trial basis before being submitted to become a decree.

g) In relation to the control of excessive fishing and destructive fishing practices:

Related existing legislations are convenient but enforcement is weak; and despite the effort of the MOA that has established in coordination with the MNCSR five monitoring sites (Tripoli, Jounieh, Carantina, Saida and Tyre) to monitor and control fishing practices, marine guards authority that is responsible for fishing control is being limited to impose a fine in case of legal violation related to the fishing nets size or to the usage of dynamites. However some improvements have been noticed in the protected areas especially in Palm Islands Nature Reserve where the army and the police of the coast are assisting in controlling any kind of illegal taking.

h) In relation to the development of a comprehensive oceans policy:

The MOA is working on updating and drafting a new fishing law that encompasses the ocean law. Bilateral and international consultations and coordination and agreements have been made with the Syrian MOA, FAO, General fishing commission for the Mediterranean (GFCM) in order to elaborate on a draft of a complementary fishing law and guideline.

i) In relation to the incorporation of local and traditional knowledge into management of marine and coastal resources:

This is being limited to fisheries mostly and as the Lebanese market is not a highly consumer of marine products as compared to other countries thus there is no real traditional knowledge studies except a marketing study conducted 4 years ago and entitled: "Contribution a l'Etat Actuel de la Pêche Marine au Liban; Barakat, S. F.; 1999; UL."

As for the practiced traditional knowledge, fishermen are very expert in their domain and their inputs are being accounted for discussing conditions, techniques and socio-economic alternatives in various projects.

Implementation of Integrated Marine and Coastal Area Management

154. Has your country established and/or strengthened institutional, administrative and legislative arrangements for the development of integrated management of marine and coastal ecosystems?	
a) No	
b) Early stages of development	
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	
Further comments on the current status of implementation of integrated marine and coastal area management.	

Lebanon has executed the Coastal Area Management Program CAMP, from September 2001 till September 2003, it was funded by UNEP- MAP and executed by MOE: the CAMP project aims at contributing to sustainable development and integrated coastal area management of the Lebanese coastal zone; to strengthen environmental management institutions in Lebanon; and to protect the coastal resources of South Lebanon by developing and applying concepts of sustainable development and methods and tools of Integrated Coastal and Marine Areas Management to the economic and social development activities of the area. Although the project aims at developing a nationwide strategy, the actual implementation is limited to the coastal area of South Lebanon (from Khalde to Naqoura) and includes specifically the municipalities of Damour, Sarafand and Naqoura.

The general objectives of the CAMP Project are as follows:

- To contribute to sustainable development and integrated coastal area management of the national coastal area;

- To strengthen environmental management institutions in Lebanon;

- To protect the coastal resources of South Lebanon by developing and applying concepts of sustainable development and methods and tools of Integrated Coastal and Marine Areas Management to the economic and social development activities of the area;

While the immediate objectives of the project include:

- identifying and elaborate strategies, solutions, tools and actions contributing to sustainable development, environmental protection and rational utilization of coastal and marine resources of Lebanon, focusing on South Lebanon;

- applying methodologies, tools and practices of sustainable development, and of Integrated Coastal and Marine Management;

- contributing to the upgrading of national and local capacities for sustainable development, integrated coastal management and protection of the environment;

- generating project results and experience to be used in defining and implementing post-project activities as envisaged by the Project Agreement; and

- developing planning, management and implementation approaches at project area, regional and national levels, applicable to other areas.

The CAMP Lebanon project area was defined at three levels:

- The strategic level is the entire national coastal area;

- The implementation level is the coastal area of South Lebanon (from Khalde to Naqoura);

- The pilot areas levels are the Municipalities of Damour, Sarafand and Naqoura.

The strategy of the project is based on the methodology of Integrated Coastal Area Management (ICAM). The project was implemented within the existing national legal and planning framework, using as basic inputs existing planning and development-related documents, available information sources on natural resources, socio-economic conditions, problems, causes, sources and impacts of pollution.

As for the major national outputs of the Camp project, they are:

- The preparation of a national ICAM Law;

- The preparation of a national ICAM Strategy;

- The preparation of an updated technical Terms of Reference (ToRs) for the elaboration of urban master plans;

- CAMP database;

- The execution of a national capacity building programme on issues relevant to ICAM principle and tools;

- The potential declaration of two sites as areas of special importance at the national level;

- The preparation of awareness tools (brochures, booklets, slides) that help to disseminate the ICAM concept.

In relation to the establishment and/or strengthening the institutional, administrative and legislative arrangements for the development of integrated management of marine and coastal ecosystems, related work was done within the CAMP project. In fact a draft legal framework was elaborated and has stipulated in its 30 articles general guidelines for coastal zone management. It has relied on the law 444 principles and has included a definition for coastal areas and calls for the establishment of a higher council to manage coastal zones. Besides it has integrated the principle of penalties based on the polluter pays principle and incentives provided for conservation. This law was drafted with the aim of protecting water, coastal and marine biodiversity tourism and cultural heritage. What is need is the endorsement of the draft law and afterwards the elaboration of decrees for implementation and procedures for mainstreaming cross cutting issues with related ministries.

As for the National strategy on Integrated Coastal Areas Management elaborated by the project, the strategy provides guidance to decision-makers concerned with the management of the Lebanese coastal area, with the purpose of planning, setting and elaborating programmes and policies seeking a rational conservation of coastal zone resources, upgrading the living standards of coastal inhabitants and

introducing economic actions that value coastal assets.

The Strategy is a policy framework that sheds light on the Lebanese commitments towards internationally ratified conventions, and more specifically on the Barcelona Convention and its related protocols. Being signatory among other treaties to the Biodiversity Convention, the Ramsar Convention, and the World Heritage Convention, the Strategy provides guidance and emphasizes on the importance of putting into practice the provisions of such Conventions which are of high significance to the sustainability of coastal areas.

The proposed Strategy calls for the following overarching national policy priorities for coastal zones:

- Enforcing legal and regulatory instruments aiming at guaranteeing the sustainability of social, economic, leisure and environmental values of coastal areas

- Preserving and valuing the natural, cultural and landscape heritage as a mean to upgrade socio-economic conditions

- Adopting and applying the concept of Integrated Coastal Area Management (ICAM), both at coastal and catchment area levels;

- Preserving and valuing the coastal and marine biodiversity

- Empowering local authorities and civil society to contribute to coastal resources protection

- Increasing dialogue and communication processes through information sharing and increasing awareness.

In addition to CAMP, Various recommendations were derived from projects undertaken in this regard, for example the SAP BIO project, the land use planning project (SDATL), the integrated coastal zone management project, the Darwin project about coastal vegetation survey and conservation for Lebanon. However, a comprehensive policy is needed to mainstream research studies into the rules and regulations so that a detailed action plan would be elaborated with clear segregation of duties to avoid duplication; also financial resources are highly needed.

- Integrated Coastal Management between Jbeil/Amsheet (Lebanon) and Latakia (Syria)

The project is being executed from 2000 and till 2005 with funds from the European Union under the MEDA Regional Indicative Programme -SMAP, and coordinated by a private company (Envirotech, ltd.). In Lebanon, the project is implemented under the supervision of MoE.

The purpose of the project is to develop and introduce an integrated coastal management plan in the project area. The project has achieved the following activities in Lebanon:

Guidance manuals on wastewater treatment and tourism management, and trainings were developed and conducted for decision makers such as head of Municipalities and other concerned institutions.

The project carried out ecotourism planning in a coastal marine city "Enfeh". A brochure, a touristic map, on-site informative panels, a website, 3 trails and an interactive CD-ROM on Management Plan Manual for a More Efficient Touristic Development were developed in close coordination with the Municipality of Enfeh, NGOs, and local community.

The demonstration activity concerning wastewater treatment was carried out in the coastal city "Batroun". This activity consisted in the construction of a low energy consumption wastewater treatment plant serving 2,000 inhabitants. The Municipality of Batroun provided the site and constructed a sewerage network within the city. Envirotech and its partners conducted all required studies and designs as well as an Environmental Impact Assessment (EIA) that was approved by the Ministry of Environment. The construction of the wastewater treatment plant was completed in early November 2005.

155. Has your country implemented ecosystem-based management of marine and coastal resources, for example through integration of coastal management and watershed management, or through integrated multidisciplinary coastal and ocean management?

a) No	X
b) Early stages of development	
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	

Further comments on the current status of application of the ecosystem to management of marine and coastal resources.

Ecosystem approach to marine economy in Lebanon is at its early stages and subject to discussions. However, few initiatives have been undertaken in protected areas.

Marine and Coastal Living Resources

156. Has your country identified components of your marine and coastal ecosystems, which are critical for their functioning, as well as key threats to those ecosystems?	
a) No	
b) Plans for a comprehensive assessment of marine and coastal ecosystems are in place (please provide details below)	
c) A comprehensive assessment is currently in progress	
d) Critical ecosystem components have been identified, and management plans for them are being developed (please provide details below) x	
e) Management plans for important components of marine and coastal ecosystems are in place (please provide details below)	
f) Not applicable	
Further comments on the current status of assessment, monitoring and research relating to marine and coastal ecosystems, as well as key threats to them	
<p>Assessment of marine and coastal biodiversity at national level was carried out through the Biodiversity Country Study developed by the Ministry of Agriculture in 1996 with funds from UNEP/GEF. Afterward, no national species assessment was done, however assessment and monitoring of fauna and flora species in the two coastal and marine nature reserves of Tyre coast and palm islands were conducted through the PAP. On the other hand, management plans for the two mentioned nature reserves were developed.</p> <p>Furthermore; assessment, monitoring and research related to marine and coastal ecosystems and species were carried out by many scientists and researchers from the MNCSR.</p> <p>In regards to identification of threats to the marine and coastal ecosystem, a national report on marine and coastal biodiversity in Lebanon was developed in 2002 through the SAP_BIO project, the national report constitute a major input for preparing a Strategic Action Plan for the conservation of the marine and coastal Biodiversity. The report constitute the main output of processes that were carried out at national level, aiming at:</p> <ul style="list-style-type: none"> • Identifying problems and threats affecting marine and coastal biodiversity and their proximate/ultimate causes • Assessing their relative importance, • Identifying national conservation priorities, • Identifying remedial actions such as: <ul style="list-style-type: none"> - preserving single endangered/threatened species/populations by special protection plans; conservation of threatened habitats, communities, ecosystems, landscapes by creating Marine and Coastal Protected Areas - limiting some fishing activities by instituting Fishing Exclusion Zones for some gear and/or some period of time - other actions. <p>The SAP_BIO National Report include the following information about the marine and coastal ecosystems in Lebanon:</p> <p>I. Basic information on status in the country</p> <ol style="list-style-type: none"> 1. Physical environment of the Lebanese coastal zone <ol style="list-style-type: none"> 1.1. Fresh water resources and quality 1.2. Continental shelf 1.3. Sea currents 1.4. Sedimentary processes 1.5. Water pollution 1.6. Nutrients 2. Marine and Coastal biodiversity 3. Documents and information available in the country 4. Relevant activities that have been implemented at the national level 5. Identified gaps 6. Relevant on-going and/or planned activities 7. Responsible national structures or institutions present in the country 8. Present level of national capacity in the country 9. Level of public awareness 10. Level of government and local authority awareness 11. Role of NGOs in the conservation process 12. Major stakeholders involved or to be involved in the process 	

13. Existing legal regulations
14. List of international Conventions, Protocols, etc. signed/ratified by Lebanon

II. Analysis of the present situation

1. Issues and problems relevant to the country of Lebanon
2. Major threats resulting from the problems relevant to the country of Lebanon

The major threats to the marine and coastal ecosystems identified by the SAP-BIO national report are the following:

- I. Pollution: Urban pollution, Industrial pollution, Agriculture and Ballast water
- II. Development: Population growth, infrastructure development, land appropriation and lack of communication
- III. Tourism: Development of and encroachment on public land, pollution and recreational activities
- IV. Fishing: Illegal harvesting techniques, invasive species, lack of data
- V. Lack of data: Insufficient number of specialists, lack of interest from the authorities and academic institutions, lack of funding for research and research facilities
- VI. Lack of awareness: lack of marine environmental education in schools and universities, lack of trained school teachers in environmental education, modest environmental marine programs in the media, level of commitment of non-governmental education, limited funding, lack of environmental awareness in government institutions and lack of enforcement of existing regulations
- VII. Eutrophication: No problems recorded

In relation to the identification of components critical for the functioning of marine and coastal ecosystems, there has been no official screening conducted and no comprehensive document integrating relevant systematic studies except for a study focusing on the dynamic of marine population, 30 years ago. However there are some efforts deployed by research centers and some NGOs working on specific projects related for example to sea turtles in Tyre coast (MedWet coast) or in palm island (MedWet coast in collaboration with the University of Balamand); or to endangered sea weeds (AUB); or to marine terraces whereby pollution degree is being monitored in 22 sites since ten years (MNCSR). Also there are initiatives tackling the critical ecosystem components and management plans in marine protected areas.

157. Is your country undertaking the following activities to implement the Convention's work plan on coral reefs? Please use an "X" to indicate your response.

Activities	Not implemented nor a priority	Not implemented but a priority	Currently implemented	Not applicable
a) Ecological assessment and monitoring of reefs				X
b) Socio-economic assessment and monitoring of communities and stakeholders				X
c) Management, particularly through application of integrated coastal management and marine and coastal protected areas in coral reef environments				X
d) Identification and implementation of additional and alternative measures for securing livelihoods of people who directly depend on coral reef services				X

e) Stakeholder partnerships, community participation programmes and public education campaigns				X
f) Provision of training and career opportunities for marine taxonomists and ecologists				X
g) Development of early warning systems of coral bleaching				X
h) Development of a rapid response capability to document coral bleaching and mortality				X
i) Restoration and rehabilitation of degraded coral reef habitats				X
j) Others (please specify below)				X
Please elaborate on ongoing activities.				
There are no coral reefs in Lebanon. However and on the other hand, what is important in Lebanon are the terraces found in the eastern southern part of the Mediterranean basin and there is a regional program funded for 2004-2005 by the InterIslamic Science and Technology Network on Oceanography (INOCLE) aiming at the conservation of terraces; also within the same context, there is a bilateral project with Syria for the elaboration of a common coastal strategy in this regard.				

Marine and Coastal Protected Areas

158. Which of the following statements can best describe the current status of marine and coastal protected areas in your country? Please use an "X" to indicate your response.	
a) Marine and coastal protected areas have been declared and gazetted (please indicate below how many)	X
b) Management plans for these marine and coastal protected areas have been developed with involvement of all stakeholders	X
c) Effective management with enforcement and monitoring has been put in place	X
d) A national system or network of marine and coastal protected areas is under development	X
e) A national system or network of marine and coastal protected areas has been put in place	
f) The national system of marine and coastal protected areas includes areas managed for purpose of sustainable use, which may allow extractive activities	X
g) The national system of marine and coastal protected areas includes areas which exclude extractive uses	X
h) The national system of marine and coastal protected areas is surrounded by sustainable management practices over the wider marine and coastal environment.	✳
i) Other (please describe below)	
j) Not applicable	
Further comments on the current status of marine and coastal protected areas.	
a) Within the framework of the protected areas executed by the MOE, seven areas have been declared as protected areas among which there are two marine and coastal zones: Palm Islands Nature Reserve (PINR) declared by law no. 121/1992 and Tyre Coast Nature Reserve (TCNR) declared by law no. 708/1998.	
b) Management plan for PINR had been developed through and endorsed by the Ministry of	

Environment in 2000; and for TCNR was developed through the MedWetCoast and will be declared in November 2005. The preparation of these management plans involved many stakeholders, mainly from local communities and NGOs. Both management plans developed awareness programs for schools, fishermen and local communities to improve public awareness of the need for marine conservation: Interpretation signages, leaflets, workshops, seminars, posters, video films, audio-cassettes, guided tours, etc. have been achieved.

c) Effective management with enforcement and monitoring is being applied within the protected areas (Tyre coast and Palm Island) and also within the frame of some specific projects related to biofarm nematodes, dolphin and turtles. Thus, monitoring is at early stage of development.

d) A national monitoring program is under development however a Franco-Libano project (NCSR-CEDRE) executed since 1999 has addressed the regular coastal monitoring of species (identification, labeling etc) in the offshore and within the waters of PINR; for the time being, water quality (nutrients, salinity, temperature, sediments, phytoplankton) is being regularly monitored by the MNCSR.

e) In relation to national systems or networks established already, the relevant contacts have been established for PINR and TCNR whereby coordination has been devised for tagging turtles, exchange of information, expertise, visits and networking.

f) In relation to sustainable use, it is being addressed in an ideal approach in any forum or strategy or action plan devised however there is fragmentary implementation and follow up in fields in this regard.

g) Regarding Palm Islands, there are areas or "strictly protected zones" which exclude extractive use; however for Tyre coast there are clearly defined areas for grazing and tourism and others strictly protected. Fishing areas are in the process of being defined.

h) The national system of marine and coastal protected areas is not surrounded by sustainable management practices but there is a regional monitoring program applied all along the Lebanese coast and another project in collaboration with the Syrian university to follow on that. However studies are still limited especially in relation to fish stocks and quantities of sand removed.

Mariculture

159. Is your country applying the following techniques aimed at minimizing adverse impacts of mariculture on marine and coastal biodiversity? Please check all that apply.

a) Application of environmental impact assessments for mariculture developments	X
b) Development and application of effective site selection methods in the framework of integrated marine and coastal area management	
c) Development of effective methods for effluent and waste control	X
d) Development of appropriate genetic resource management plans at the hatchery level	
e) Development of controlled hatchery and genetically sound reproduction methods in order to avoid seed collection from nature.	
f) If seed collection from nature cannot be avoided, development of environmentally sound practices for spat collecting operations, including use of selective fishing gear to avoid by-catch	
g) Use of native species and subspecies in mariculture	X
h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polypoids.	
i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity	
j) Minimizing the use of antibiotics through better husbandry techniques	
k) Use of selective methods in commercial fishing to avoid or minimize by-catch	

l) Considering traditional knowledge, where applicable, as a source to develop sustainable mariculture techniques	
m) Not applicable	
Further comments on techniques that aim at minimizing adverse impacts of mariculture on marine and coastal biodiversity.	
<p>a) Environmental impact assessment was conducted for a tuna farm in 2003.</p> <p>b) In relation to the Mariculture it is still in its development stages whereby a pilot station (1000 m2) for marine aquaculture of some Mediterranean plant species introduced has been established in the Institute of Oceanography and Fisheries (MOA); however, there is a need to consider economic approaches for Mariculture (usage of sea cages as no pumping is needed); to consider the elaboration of laws to manage the sector; also there is a need for experts and maintenance. In relation to the investments in the fisheries, it is being limited as it is qualified as third degree industry according to the MOA the fact that is impacting on the permitting processes and on the cost and confidence of the investor in this sector which is not subsidized by the government.</p> <p>k) In regards to commercial fishing, it's being artisanal but not regulated by laws and standards as there are no fleets.</p>	

Alien Species and Genotypes

160. Has your country put in place mechanisms to control pathways of introduction of alien species in the marine and coastal environment? Please check all that apply and elaborate on types of measures in the space below.	
a) No	X
b) Mechanisms to control potential invasions from ballast water have been put in place (please provide details below)	
c) Mechanisms to control potential invasions from hull fouling have been put in place (please provide details below)	
d) Mechanisms to control potential invasions from aquaculture have been put in place (please provide details below)	
e) Mechanisms to control potential invasions from accidental releases, such as aquarium releases, have been put in place (please provide details below)	
f) Not applicable	
Further comments on the current status of activities relating to prevention of introductions of alien species in the marine and coastal environment, as well as any eradication activities.	
<p>Techniques adopted are limited to the identification of species but there is no real effort deployed for species monitoring nor for threat identification; also there are no measures taken for inducing prevention or treatment if invasion happens. All research related to this field are limited to scientific publication.</p> <p>In fact, there have been no guidelines and no assessments of threats (pathological or invasiveness or others) done on the presence of species. However and in relation to invasive species 80 species of fish have been identified as being driven from the Sues Canal to the Lebanese shore and tagged by the National Marine Center as alien species. For example, <i>Fistularia commersoni</i> has been identified as a threatening fish species as it is a carnivorous fish that eats eggs and other fish. Also, few types of plankton have been identified as alien species as well as some algae and some benthos.</p> <p>What is needed is the issuance of legislation in this regard and proper enforcement as well.</p>	

Box LXIV.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Activities undertaken to implement the marine ecosystems belonging to Lebanon are limited and insufficient. Although establishment of coastal and marine protected areas comprises two sites only that are far from covering comprehensive coverage of coastal and marine habitats. Both of them are having management plans in place, implementation of some also in the process. Integrated management of coastal areas is of particular importance in Lebanon, as coastal zone is one of the most conflicting areas in the country – high nature values combined with high expectations on economic use from general public. The process of integrated management has been initiated and needs to be continued. Concept of management planning in Lebanon integrates both nature protection and socio-economic development needs, but translation into implementation is still insufficient.

Problems encountered concern both the management and threat problems as well as those related to expertise.

The tasks already performed certainly contribute to the achievement of goals 1 and 2 of the Strategic Plan of the Convention.

At present, legal regulations concerning the introduction of alien species into the marine environment are not sufficiently developed. Research has been carried out on an initial scale. We assume that in the future, together with the growth of effectiveness in international problem-solving (for example, putting into effect the International Convention for the Control and Management of Ships' Ballast Water and Sediments document), research in this field will be intensified and will lead to the achievement of goals of the Strategic Plan of the Convention, as well as the "2010 Target".

NBSAP and its addendum foresees several activities to be implemented, many of them are in process of implementation if not in place, e.g. the activities that are mentioned under the following objectives:

Objective 1: Expand and manage the protected areas system in terrestrial, marine and fresh water environments:

- Characterize and classify protected areas (mapping, protection, rehabilitation, updating inventories)
- Manage sites according to the local needs and requirements

Objective 2: Protect coastal and marine ecosystems and biodiversity:

- Establish nature reserves and marine parks representing major ecogeographical areas

Objective 3: Provide stability to permit the establishment of ecological equilibrium

- Protection of remarkable natural habitats, characterized by their ecology
- Creating land zoning maps

The actions undertaken contribute to the implementation of the 2010 Goals and the Millennium Development Goal 7 *Ensure environmental sustainability*.

Major constraints to implementation of Marine and Coastal Protected Areas Program are related to lack of political support and high public pressure on use of coastal resources, combined with lack of capacity of municipalities (lack of funding to manage protected areas, lack of human resources, will and capacity to apply integrated management approach) and lack awareness about marine ecosystems and biodiversity issues due to lack of marine environmental education in schools and universities, lack of trained school teachers in marine environmental education, modest environmental marine programs in the media, limited funding and lack of enforcement of existing regulations.

What is needed is to work closely with various ministries on action plans and on launching monitoring activities for important species in the country; but for that new educational system is needed and smooth ministerial procedures are required.

Also what is needed is to take the right measures in case of violations of laws and to implement necessary activities to address the needs and gaps related to the conservation and management of marine and coastal ecosystems.

Agricultural biological diversity

161. ? Has your country developed national strategies, programmes and plans that ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components? (decisions III/11 and IV/6)	
a) No	
b) No, but strategies, programmes and plans are under development	
c) Yes, some strategies, programmes and plans are in place (please provide details below)	X
d) Yes, comprehensive strategies, programmes and plans are in place (please provide details below)	
<p>Further comments on agrobiodiversity components in national strategies, programmes and plans.</p> <p>Although Lebanon has no national agriculture strategy, MREA (French Regional Mission for Water and Agriculture) is implementing since 2003 several activities in cooperation with Lebanon; of which, some are supporting the Ministry of Agriculture in defining a strategy for Lebanese agriculture. Whereas, the 2005 NBSAP addendum 2005 encompasses two actions that are considered a basis for the development of the strategy, under objective 1, and one action which contributes to sustainable use of agrobiodiversity under objective 2 below:</p> <p>Objective 1: Establish a national biodiversity database for documentation and monitoring of agrobiodiversity:</p> <ul style="list-style-type: none"> - Assess the present status of agrobiodiversity at the national level. - Establish an environmental research station to study the ecological changes over time <p>Objective 2: To protect agricultural ecosystems and associated biodiversity</p> <ul style="list-style-type: none"> - Establish a central gene bank where different ex-situ conservation activities are performed including breeding - Within the framework of the regional agrobiodiversity project, a policy options frame for the conservation and sustainable use of agrobiodiversity has been submitted to the Lebanese government in 2005. Also, a proposal for the establishment of a plant genetic resources programme setting for institutions has been elaborated; in addition legislative studies are to be carried out in order to adopt the treaties of the convention on biological diversity. The following is a summary of what was achieved so far in relation to the policy legislation elaboration: <ul style="list-style-type: none"> - The project reviewed the national legislation related to biodiversity, nature protection, and management of natural resources in Lebanon as well as the relevant public institutions concerned. - The project did a study that proposes the mechanism for the national domestication of international conventions and agreements. The project did a thorough review of international conventions and agreements related to the conservation and sustainable use of Agrobiodiversity, that have been ratified by the Lebanese government or that are expected to be ratified in the future. Results have indicated that there is a serious need to legally regulate and coordinate all issues related to plant genetic resource conservation, use and exchange, especially in the light of the concerned agreements and conventions developed in the region and globally. - The relationship and implications of these international conventions on the present national legislation were analyzed and a preliminary proposal for the domestication of the ratified conventions was developed. - The project prepared a proposal for the establishment of a national plant genetic resources (PGR) programme in Lebanon based on the previous study done on the current national situation related to legislation and the organizational setup of the concerned public institutions. The objective of this PGR programme is to regulate the conservation and exchange of the national plant genetic resources by setting the scientific, administrative, institutional and legal framework for this sector, in the light of the international and regional relevant agreements and conventions that were ratified by Lebanon. - A Memorandum of Understanding has been regionally prepared by the project and signed by the Ministries of Agriculture of Lebanon, Jordan, Syria and the Palestinian authority on June 29th, 2005 to promote Agrobiodiversity Conservation and Exchange of PGR among the four countries. 	

- A preliminary study was conducted for the development and testing of different policy options at the farm-household level using Linear Programming model based on the socio-economic data collected from the several project sites. The options that were selected for testing, namely nature-based and rural/eco-tourism were based on the information collected from the various studies undertaken by the project.
- Finally, the project produced the final document on policy options at the farm-household, community and national levels that promote sustainable Agrobiodiversity conservation and sustainable management of natural resources. These options were based on the socio-economic, ecological and institutional analysis of factors affecting Agrobiodiversity.
- Public Awareness Programs dealing with sustainable agricultural practices and agricultural biodiversity conservation are generally limited to project's activities. Awareness programs that are in general conducted by environmental NGOs which often are centered on wildlife and natural conservation tend to neglect or sometimes are very partial regarding agricultural activities and livestock production. Only recently some NGOs pay attention to biofarming.

162. ■ Has your country identified ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use, including food security, of agricultural biological diversity? (decision V/5)

- | | |
|--|---|
| a) No | |
| b) No, but potential measures are under review | |
| c) Yes, some measures identified (please provide details below) | X |
| d) Yes, comprehensive measures identified (please provide details below) | |

Further information on ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use of agricultural biodiversity.

There are no signs of using Gurt Techniques to address the potential impacts of genetic use restriction in Lebanon. As for the Genetically Modified Organisms, they relate to the Protocol of Biosafety which is not ratified yet by the Lebanese parliament. However, the implementation of the National Biosafety Framework project has led to a draft, according to which the Lebanese law will be harmonized with the Biosafety Protocol and in accordance with the principle of sustainable development and without detrimental effects on health and the environment.

Annex to decision V/5 - Programme of work on agricultural biodiversity

Programme element 1 – Assessment

163. Has your country undertaken specific assessments of components of agricultural biodiversity such as on plant genetic resources, animal genetic resources, pollinators, pest management and nutrient cycling?

- | | |
|--|---|
| a) No | |
| b) Yes, assessments are in progress (please specify components below) | |
| c) Yes, assessments completed (please specify components and results of assessments below) | X |

Further comments on specific assessments of components of agricultural biodiversity.

Within the framework of the agrobiodiversity project, various initiatives and ethnobotanical surveys were done in order to identify the flora species (landraces and wild relatives) present in the selected sites as well as to assess factors of degradation impacting on the presence of the species monitored. The priority species generated from the ecogeographic and botany survey and which were monitored in target areas in Lebanon are the following: wheat (wild *Triticum* and *Aegilops* spp.; landraces), barley (*Hordeum spontaneum*; landraces), lentil (wild *Lens* spp.; landraces), vetch (wild *Vicia* spp.), *Lathyrus* (wild *Lathyrus* spp.), medics (wild *Medicago* spp.), clover (wild *Trifolium* spp.), Apricot (local varieties), cherries (local varieties), almond (wild *Prunus* spp.; local varieties), pear (wild *Pyrus* spp.; local varieties), pistachio (wild *Pistacia* spp.; local varieties), fig (local varieties) and *Allium* (wild *Allium* spp.; local varieties)

Lebanon is an active member of the Mediterranean Citrus Network, MECINET that was established since 1993 at a "FAO - Expert Meeting to promote Inter-country Cooperation on Citrus Production Improvement in the Mediterranean Region". The main goal of this network is the conservation and utilization of genetic resources of citrus and related genera through the establishment of an inter-country global research and information programme and an articulated plan of action.

Lebanon is also an active member of West Asia and North Africa Plant Genetic Resources Network (WANANET) that was established during a workshop sponsored by IBPGR (now IPGRI), ICARDA and FAO in May 1992. The overall objectives were to: identify common problems and constraints hampering effective conservation, utilization and assessment of plant genetic resources in member countries and in the region and to assist National Agricultural Research Systems (NARS's) in developing national plant genetic resources programmes.

IPGRI is involved in Lebanon since 2001 in a project focusing on a number of priority species used as vegetable, condiment, medicinal and other purposes, currently harvested from the wild and much appreciated by the local populations (namely sage (*Salvia* spp.), oregano (*Origanum* spp.), chicory (*Cichorium* spp.) and *Gundelia* spp.) This project is particularly valuable for assessing the ecogeographic distribution of these species, their level of threats, degree of use and analyses of the constraints limiting their full valorization through domestication and cultivation. Other topics covered by this project include 1) the development of priorities for a country-wide strategy for the promotion of underutilized species, 2) the identification of sites for in situ/on farm conservation, 3) the analyses of recommended breeding and selection strategies needed to improve the selected species and 4) the analyses of possible seed production system and germplasm dissemination to farmers of the improved material for enhancing the wider use of cultivated material and thus reducing the impact on the wild populations.

Computerizing the Plant Genetic Resources documentation system in LARI is in continuous progress and is mainly focusing on documentation of files and reports related chiefly to evaluation data.

Several studies were completed at the American University of Beirut to characterize and assess the genetic diversity of native fruit trees in collaboration with the International Plant Genetic Resource Institute (IPGRI), and the Lebanese Agriculture Research Institute (LARI).

164. Is your country undertaking assessments of the interactions between agricultural practices and the conservation and sustainable use of the components of biodiversity referred to in Annex I of the Convention (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance)?

a) No	
b) Yes, assessments are under way	
c) Yes, some assessments completed (please provide details below)	X
d) Yes, comprehensive assessments completed (please provide details below)	

Further comments on assessment of biodiversity components (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance).

Within the frame of the agrobiodiversity project, and at within the selected sites, the inputs of the local communities were accounted for through various surveys in relation to farmers' practices and their rationale behind replacing landraces and wild relatives with new introduced varieties. Other surveys were ecogeographic and related to the habitats and ecosystems while others were socioeconomic and studying the potential values of species. All these surveys were conducted with the intention of setting an action plan to promote agrobiodiversity conservation and sustainable uses.

165. Has your country carried out an assessment of the knowledge, innovations and practices of farmers and indigenous and local communities in sustaining agricultural biodiversity and agro-ecosystem services for food production and food security?

a) No	
b) Yes, assessment is under way	
c) Yes, assessment completed (please specify where information can be retrieved below)	X

Further comments on assessment of the knowledge, innovations and practices of farmers and indigenous and local communities.

In many projects implemented in Lebanon such as « Integrated Impact Assessment of the Association Agreement on the Olive Oil Sector in Lebanon (EU project, 2002), Conserving and increasing the Use of Neglected and Underutilized Crop Species (Ipgri project, 2001), Study of the Impact of minor crops on the lives and livelihoods of farmers (Ipgri project, 1992), etc. one of their main goals is to assess cultivating practices across the country and existing processing activities.

Within the frame of the agrobiodiversity project, and in relation to indigenous knowledge, a survey related to the livelihood of the local communities within the selected sites for the project was conducted in 2001 and has focused on the uses of natural resources on project's sites. Also another survey was conducted with local communities about indigenous knowledge of the uses of plants in target areas; further a workshop on the importance of indigenous plant genetic resources for sustainable agriculture was held for local farmers (around 60 participants) and local NGOs.

166. Has your country been monitoring an overall degradation, status quo or restoration/rehabilitation of agricultural biodiversity since 1993 when the Convention entered into force?

a) No	
b) Yes, no change found (status quo)	
c) Yes, overall degradation found (please provide details below)	X
d) Yes, overall restoration or rehabilitation observed (please provide details below)	

Further comments on observations.

Since 1999 and within the activities carried by the agrobiodiversity project, monitoring on the intensity of the factors of degradation on the selected sites was done regularly and the most important factors of degradation revealed were ranked in an ascendant order as such: drought, overgrazing, introduction of new/alien species and land overuse.

Furthermore, many species targeted by the Agrobiodiversity project are forage legumes. These species are under threat mainly due to overgrazing. The project established several demonstration sites in Aarsal and Nabha to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation.

Lebanon in cooperation with IPGRI has initiate in 2001 a pilot work that would address the promotion of under-utilized and neglected plant species through a multidisciplinary approach. The project focused on a number of priority species used as vegetable, condiment, medicinal and other purposes, currently harvested from the wild and much appreciated by the local populations (namely sage (*Salvia* spp.), oregano (*Origanum* spp.), chicory (*Cichorium* spp.) and *Gundelia* spp.) It was found that no organized marketing, nor conservation and research took place for these species in Lebanon. The human pressure on the wild populations of these species is increasingly becoming unsustainable and the survival of this resource base is at risk. This work has assessed the ecogeographic distribution of these species, their level of threats, degree of use and analyses of the constraints limiting their full valorization through domestication and cultivation.

Programme element 2 - Adaptive management

167. Has your country identified management practices, technologies and policies that promote the positive, and mitigate the negative, impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods?

a) No	
b) No, but potential practices, technologies and policies being identified	
c) Yes, some practices, technologies and policies identified (please provide details below)	
d) Yes, comprehensive practices, technologies and policies identified (please provide details below)	

Further comments on identified management practices, technologies and policies.

The impact of agriculture on other aspects of biodiversity have been recognized such as, problems associated with soil erosion, the chemical contamination of water, wetland drainage, urban encroachment, pollution and waste management and solutions are being implemented in many cases: e.g. sand dune fixing with indigenous plants is implemented by Tyre Coast Nature Reserve managing team, chemical contamination of water is controlled through law enforcement and awareness campaigns, drainage of water in wetlands to gain more agricultural territories is under control in Aammiq Wetland due to a joint effort of Protected Areas Project and MedWetCoast Project. Pesticide use is opposed by promotion of biofarming and awareness through MedWetCoast, USAID, YMCA projects and waste management is improved with the assistance of USAID.

In relation to policy issuance related to the improvement of the capacity to sustain livelihoods, the agrobiodiversity project has worked on a draft action plan that would be formulated into a law and

would promote conservation and sustainable use of agrobiodiversity. As for management practices and technologies for example it has been found that seed cleaning of landraces would increase their yield by 15% and as such replacement of landraces by new varieties would be mitigated. Also in relation to management practices and specifically for local varieties of fruit trees it was found that water harvesting is convenient. Further, several trainings about integrated pest management, orchard management practices and range land management practices were conducted for staff or local communities' participants.

Under USAID/Lebanon's agriculture portfolio, World Vision has conducted two training sessions for 21 farmers in Nabatiyeh in Marjayoun, as well as awareness sessions for 147 students in Darb El Sim in Sidon and 20 students in Joun in Shouf. The sessions introduced farmers to agricultural techniques for grapes and olives. Sessions covered preventive measures against diseases and pests to provide optimum yields. 167 students in grades 7, 8 and 9 received awareness sessions on organic agriculture. Sessions covered agricultural practices and the benefits of organic agriculture.

Programme element 3 - Capacity-building

168. Has your country increased the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable agricultural biodiversity and to develop strategies and methodologies for *In-situ* conservation, sustainable use and management of agricultural biological diversity?

a) No

b) Yes (please specify area/component and target groups with increased capacity)

Further comments on increased capacities of farmers, indigenous and local communities, and their organizations and other stakeholders.

Several trainings and workshops were conducted for local communities and researchers in areas related to Agro-biodiversity project activities (benefiting more than 800 persons). These included trainings on integrated pest management, organic farming, orchard management practices, water harvesting techniques, GIS applications for management of agrobiodiversity, quality seed production, proper and safe use of pesticides, soil and water resources management, plant taxonomy, management of NGOs, land tenure and natural resources management, improved apiculture techniques, agro-food processing, in-situ conservation, importance of indigenous plant genetic resources in sustainable agriculture, establishment and management of fruit trees nurseries, pasture and pasture nursery management. In addition, the project supported around 20 researchers and 10 farmers to attend many trainings provided at the regional level.

The USAID Programme is also supplying Lebanon with significant environmental improvements through a combination of policy-oriented technical assistance and project investments. The programme Strengthens municipal, local community and NGO capabilities to implement sustainable waste management and ecosystem restoration practices through training and outreach (dissemination of guidance documents and manuals).

The YMCA-IRDP program to improve community awareness and the practice of appropriate environmental management procedures has met with considerable success in building the capacity of its constituent target groups through the provision training and a participatory approach to development.

169. Has your country put in place operational mechanisms for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity?

a) No

b) No, but potential mechanisms being identified

c) No, but mechanisms are under development

d) Yes, mechanisms are in place

X

170. Has your country improved the policy environment, including benefit-sharing arrangements and incentive measures, to support local-level management of agricultural biodiversity?	
a) No	X
b) No, but some measures and arrangements being identified	
c) No, but measures and arrangements are under development	
d) Yes, measures and arrangements are being implemented (please specify below)	
Further comments on the measures taken to improve the policy environment.	
<p>The Ministry of Environment has developed with the technical assistance of a group of experts from a private academic institution, the American University of Beirut (IBSAR/AUB) and through GEF funds a draft law on Access and Benefit Sharing.</p> <p>One of the major principles provided for in the Draft Law is the sovereignty of the State over biological resources; the State exercises said right in the name and for the benefit of the local communities. The Draft Law designates the MoE through the relevant biodiversity department as the competent national authority to be responsible for the implementation and enforcement of the provisions of the law, in coordination with other relevant ministries. The draft law proposes the creation of an advisory committee headed by the Ministry of Environment and including representatives from relevant ministries and organizations and representatives from local communities, the advisory committee will assist the MoE in its implementation and enforcement of the law, it will have mainly a major role in revising the ABS requests and suggesting its approval or rejection to the MOE.</p> <p>As for incentive measures they were addressed by the law of protection of Environment (law 444/02) which includes a specific chapter on incentive measures. However, this is not applied yet due to the fact that relevant implementation decree was not issued yet.</p> <p>However, the Ministry of Environment provides support to the farmers in the protected areas to manage their land in the biodiversity friendly way where organic farming is promoted and marketed with the assistance of the managing authorities. Support given from the Rural development activities of the Agro-biodiversity project serves both as incentive for biodiversity conservation as well as social measure preventing rural areas from abandonment.</p>	

Programme element 4 – Mainstreaming	
171. Is your country mainstreaming or integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes?	
a) No	
b) No, but review is under way	
c) No, but potential frameworks and mechanisms are being identified	X
d) Yes, some national plans or strategies mainstreamed and integrated into some sectoral plans and programmes (please provide details below)	
e) Yes, some national plans or strategies mainstreamed into major sectoral plans and programmes (please provide details below)	
Further comments on mainstreaming and integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes.	
<p>In relation to the conservation and sustainable use of agricultural biodiversity Lebanon has proved its ability to elaborate on policies, strategies and national plans however what is lacking is a long term vision with clear setting of priorities; implementation of activities and the adaptation of various components related to a certain sector into the different hierarchical systems of ministries and institutions. However, some specific initiatives are being taken for example within the frame of the 5-year reforestation program by the MOE, indigenous species are being adopted.</p>	

172. Is your country supporting the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans, and its integration into wider strategies and action plans for biodiversity?	
a) No	
b) Yes, by supporting institutions in undertaking relevant assessments	
c) Yes, by developing policy and planning guidelines	X
d) Yes, by developing training material	
e) Yes, by supporting capacity-building at policy, technical and local levels	
f) Yes, by promoting synergy in the implementation of agreed plans of action and between ongoing assessment and intergovernmental processes.	
Further comments on support for institutional framework and policy and planning mechanisms. Lebanon has ratified various international treaties and agreements and is trying to abide by the various regulations requested in various domains related to the environment and biodiversity. And for that sake several projects and initiatives are being developed in order to alienate efforts towards a comprehensive biodiversity strategy with clear components to be integrated and mainstreamed into other ministries. However efforts are deployed within the frame of projects. As for the agrobiodiversity it was mentioned earlier that a policy option for the institutional management of the conservation and sustainable use of agrobiodiversity has been elaborated.	

173. In the case of centers of origin in your country, is your country promoting activities for the conservation, on farm, <i>In-situ</i> , and <i>Ex-situ</i> , of the variability of genetic resources for food and agriculture, including their wild relatives?	
a) No	
b) Yes (please provide details below)	
Further comments on of the conservation of the variability of genetic resources for food and agriculture in their center of origin. In relation to the in-situ conservation, 22 monitoring areas in the three project sites were selected within the frame of the agrobiodiversity project and were regularly monitored; as for their future conservation and monitoring, they would be the responsibility of the LARI. As for the ex-situ conservation, the agrobiodiversity project has preserved gene banks for forages and cereals at ICARDA black boxes.	

Box LXV.

Please provide information concerning the actions taken by your country to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.
In Lebanon, bees are the main taxon that benefited from pollination research studies. Other pollinators such as butterflies, bats, birds and other insects were not subject to studies as pollinator populations. The lack of expertise in this field, combined with the low priority given to pollination in the country, constitute together a problem towards the implementation of the Plan of Action for the International Initiative for the conservation and sustainable use of pollinators. Subsequently, it is difficult to fulfill the obligation due to the little knowledge on the taxonomic identification of pollinator populations, dispersed information among several research institutes, lack of the strategy for agricultural biodiversity conservation and insufficient financial means. Despite these limitations, there have been several research studies implemented in Lebanon, whose aim is to protect bees from Varroa mites (ectoparasite of bees), or to identify plants that are visited by bees and to some extent by butterflies or even to increase the awareness of the public about their role in the environment. According to the above, no action was taken by Lebanon to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.

Box LXVI.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

The 2005 NBSAP addendum 2005 calls for:

1. The establishment of a national biodiversity database for documentation and monitoring of agrobiodiversity through the Assessment of the present status of agrobiodiversity at the national level.
2. The protection of the agricultural ecosystems and associated biodiversity through the establishment of a central gene bank where different ex-situ conservation activities are to be performed including breeding.
3. The protection of agricultural ecosystems and maintain native biological diversity through the establishment of farms to maintain and propagate the traditional or "heritage" varieties or breeds that are being replaced by "modern" varieties.
4. The Protection of agrobiodiversity from deleterious agricultural practices, and development and implementation of policies and practices to minimize loss of genetic diversity through development of incentive taxation measures and penalties

The SAP_BIO Action Plan (2) stresses on the fact that the remaining agriculture coastal lands should be considered protected areas at the national level.

The effort recently done to update regulations concerning biodiversity conservation in agriculture is promising.

The progress which takes place with respect to agricultural biodiversity conservation in rural areas has been a result of implementing the Agrobiodiversity Project in collaboration with local communities and NGOs.

Main outcomes: agriculture biodiversity issues included in the strategic national and subsidiary plans. Several activities of relevance and in conjunction with FAO are implemented. Growing awareness and capacity of farmers in rural areas.

Actions undertaken and described in above section contribute to the achievement of all 4 main Goals of the Strategic Plan of the Convention through participation of experts on biodiversity issues during the implementation of the Agrobiodiversity project, the development of policy options supporting the conservation of local agro biodiversity at the household level and during the domestication of ratified international agreements and conventions. However, the Agrobiodiversity project and its activities constituted the most effective instrument to implement National Biodiversity Strategy and Action Plan into this sector.

The actions undertaken contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability; and contribute* to development of rural communities and small-scale agricultural practices.

Main constraints are lack of Rural Development Plan and low institutional capacity to implement it; low technical and human capacity for the scientific projects of agrobiodiversity and lack of incentives to ensure biologically friendly agriculture.

**Forest Biological Diversity
General**

174. Has your country incorporated relevant parts of the work programme into your national biodiversity strategies and action plans and national forest programmes?	
a) No	
b) Yes, please describe the process used	
c) Yes, please describe constraints/obstacles encountered in the process	X
d) Yes, please describe lessons learned	
e) Yes, please describe targets for priority actions in the programme of work	
<p>Further comments on the incorporation of relevant parts of the work programme into your NBSAP and forest programmes</p> <p>The National Biodiversity Strategy and Action Plan for Lebanon has set a goal pertaining to forest within its thematic areas relevant to terrestrial ecosystems and natural habitat. The NBSAP aimed to protect Lebanon's terrestrial biodiversity –among which forest biodiversity – from degradation and ascertain their availability for environment and economic benefits.</p> <p>The Action agenda include:</p> <ul style="list-style-type: none"> ▪ Preventing and combating forest fire, ▪ Establishing ecological tourism associated with public awareness and environmental education, ▪ Protection of remarkable habitats having ecological, their historical and/or socio-cultural values, ▪ Build an exhaustive database for monitoring and evaluation of management systems, ▪ Rehabilitation of abandoned or degraded zones, ▪ Reforestation, along with related issues as forest management, plant nurseries, choice of species to be used in this process, ▪ Develop technical and scientific studies to promote development and sustainable use of Non-Timber Forest products among which study native fodder species as an alternative for overgrazing, ▪ Develop a forest management plan, ▪ Synergize between various relevant institutions. <p>While there is no national forest policy and action plan, the MoA have invested in developing a comprehensive programme for forest protection and management and recently participatory approach has been envisaged with local communities in the different region in the country. The forest Resource Assessment (FRA) project funded by the FAO and executed by the MoA is building up a database on forest in Lebanon. The project is assessing all services and products provided by forests. A national forest policy will be developed further to the results obtained. The 5-year reforestation plan which started in 2002 has been serving restoration and rehabilitation goals using native species and wild relative species.</p> <p>The Protected Areas Project (PAP, 1996) funded by the GEF, the UNDP and executed by the MOE through the technical support of the IUCN has initiated the establishment of structure of protected areas (forests) and the development of draft laws for protected areas management taking into account involvement of local communities.</p> <p>However, barriers and constraints are still faced at all levels and this is due:</p> <ul style="list-style-type: none"> ▪ No alternatives giving to mitigate the effects of human practices destroying forest ecosystems and degrading natural resources, ▪ The Political influence considered in forest protection and affecting the decision-making process, ▪ Lack of awareness and cutting bridges between local communities and government agencies. <p>Meanwhile there have been a lot of lessons learned. Lebanon communities of practices in forest biodiversity have been a continuous learning by doing process whether in protected areas declaration, reforestation and amendment of regulatory measures.</p>	

Box LXVII.

Please indicate what recently applied tools (policy, planning, management, assessment and measurement) and measures, if any, your country is using to implement and assess the programme of work. Please indicate what tools and measures would assist the implementation.

The existing forest data is derived from investigations performed in 1966 however various initiatives are being developed as such:

- A National Biodiversity Reports have been published in nine volumes by the MoA on studies on the various habitats, flora and fauna, social and economic aspects of biodiversity among which forest biodiversity, the project was funded by the United Nations Environment Programme,
- A National Action Plan for Combating Desertification has been developed in 2003 by the MoA,
- A basic initiative is being implemented by the MOA through an FAO project (2004-2005) entitled "National Forest & Tree Inventory & Assessment in Lebanon". The project involved conducting a all-forest resources assessment including services and products and evaluating the status of forest in Lebanon in order to develop an updated forest map.
- A National Forest Policy is under development by the MoA relying on the FRA project (see above)
- Training programme and awareness sessions have been conducted by MOA to forest guards to be able to identify insects and diseases. An action plan for next year has been designed to initiate regular monitoring on outbreaks so that local forest guards would acquire the techniques and tools of monitoring
- A project entitled "Stable Institutional Structure for Protected Areas Management" (SISPAM). The project aims at finding the best institutional structure to manage the protected areas. The project aims also at ensuring the financial, legal, and technical sustainability of the structure and the protected areas.
- Within the scope of the Strategic Environmental Assessment (SEA) project that was executed by the MoE, funded by the EC-Life and managed by the UNDP, aiming at mainstreaming environmental considerations into sectoral plans and programmes, an SEA for land use has been undertaken and in which forest areas was considered.
- The Association for Forest Development and Conservation (AFDC) has implemented a 3-years project funded by Ec-Life and entitled "Towards the sustainable mechanisms in forest fire fighting in Lebanon". The project focused on data collection and information management and on the role of local community in fighting fires. For that sake a forest fire risk map has been elaborated in coordination with the MoA, MoE and Mol; also findings have been mobilized to be integrated in a national forest agency

Box LXVIII.

Please indicate to what extent and how your country has involved indigenous and local communities, and respected their rights and interests, in implementing the programme of work.

Limited initiatives to involve local communities have been undertaken. It is mainly due to the fact that joint forestry and/or participatory management are not conceptualized in the various approaches adopted in forest biodiversity programme.

Major initiatives in this regard are:

- Local offices based in the different regions in Lebanon and linked to the forestry department at the MoA local community's needs, suggestions and involvement are partially considered.
- The PAP (GEF, UNDP, MoE & IUCN, 1996) has been integrated local communities at an advanced stage of the project implementation the in the framework developed for the management of protected areas and nature reserves.
- The 5-year reforestation plan executed by the MoE have accounted for local communities whereby the plans are elaborated taking into account the socio-economic conditions of the area considered by the local municipalities and NGOs as well as for their priorities, problems, social groups, suggestions about the methodology of reforestation and ecosystem layout.
- Within the scope of the "Integrated Management of Cedar Forests in Lebanon in Cooperation with Other Mediterranean Countries" project funded by GEF and executed by the MoE in collaboration with the AUB, representatives of local communities in neighboring villages of Tannourine cedar forest (Largest cedar forest areas in the northern part of Lebanon) figure on board of the GAC and participate in the decision-making process.
- The National forest policy to be developed in 2006 as part of the FRA project (FAO & MoA) will take into account the indigenous knowledge and feedback from local communities gathered during the field assessment studies.
- Local communities and indigenous knowledge will be respected and relied on through the establishment of a Government Appointed Committee (GAC) which will be strengthened

through the “Stable Institutional Structure for Protected Areas Management” (SISPAM) project. This project aims at finding the best institutional structure to manage the protected areas, including forests; and aims also at ensuring the financial, legal, and technical sustainability of the structure and the protected areas. It is executed by MOE and launched in 2005.

Box LXIX.

Please indicate what efforts your country has made towards capacity building in human and capital resources for the implementation of the programme of work.

Efforts towards capacity building in human and capital resources have been invested in line with various projects activities though there are no national programmes synergized between different agencies or harmonized systems in this regard.

National efforts are the following:

- The 5-year reforestation programme has procured opportunity for capacity building of MoE staff in reforestation, monitoring and recording good practices as well as the allocation of capital to restore and rehabilitate degraded forests and lands. The project consists of selecting sites from communal lands and reforesting them with native species. The process is being implemented via contracting a private company that might provide human resources and agricultural engineers for the reforestation work that would be monitored in close coordination with the municipalities; thus, helping them acquire the related techniques.
- The initiatives undertaken to build capacity of the MoA staff have been implemented through bilateral, regional or international trainings funded by FAO, CIHEAM, GTZ, USAID, JICA and France. Of which:
 1. The French Government has assisted Lebanon by providing a technical and financial assistance to the Ministry of Agriculture for combating forest fires. Through this assistance a comprehensive capacity building program was undertaken. Engineers were trained in France and Lebanon; French trainers assisted by Lebanese engineers;
 2. The sustainable forest management training in 2005 funded by Japan;
 3. The Arab Forest and Range Institute training in Ladkie-Syria.
- The Association for Forest Development and Conservation (AFDC) has implemented a 3-years project funded by Ec-Life and entitled “Towards the sustainable mechanisms in forest fire fighting in Lebanon”. The project focused on data collection and information management and on the role of local community in fighting fires. For that sake a forest fire risk map has been elaborated in coordination with the MoA, MoE and MoI; also findings have been mobilized to be integrated in a national forest agency. AFDC has developed and implemented various capacity building activities (courses, seminars, workshops, etc.); such as Forest fire fighting tools and techniques and reforestation techniques.

A capacity building strategy - under development at the MOE – will point out to the assessment of human and capital resources needed for NGOs and Ministries in relation to various domains of expertise (assessment, identification, monitoring and evaluation etc).

Box LXX.

Please indicate how your country has collaborated and cooperated (e.g., south-south, north-south, south-north, north-north) with other governments, regional or international organizations in implementing the programme of work. Please also indicate what are the constraints and/or needs identified.

The collaboration between global regions has been translated into international and regional congresses and meetings attended by representatives from MoE, MoA and various institutions such as forestry congresses, MEDFOREX meetings and network, UNAYSLVA network, etc. These promote the exchange of experience, good practices in forest biodiversity and open the ground for long-term cooperation and collaboration.

- A regional cooperation between Syria and Lebanon is implemented through a reforestation project along the Libano-Syrian mountain range. The project is funded by FAO and implemented by the MOA.
- The Association for Forest Development & Conservation (AFDC) is managing a Mediterranean Forest Center in Lebanon funded by WWF. The center provides opportunities for regional training activities related to forest management and fire risks management, protected areas management, ecotourism, rural tourism, etc.
- SPNL and BirdLife international are running in Lebanon the National IBA programme which aims at protecting important areas for birds, including forests.

The constraints faced are summarized as follow:

- Limitation and exclusivity in cooperation initiatives to specific agencies (FAO with MOA, UNDP with MOE),
- Prioritization of topics and project proposals.

There is a need:

- To Mainstream the efforts into a comprehensive strategy for forest management,
- To improve coordination among ministries and private sector,
- To synergize efforts of various relevant agencies and institutions,
- To develop a strategic approach in technology transfer and cooperation related to forest assessment, monitoring, implementation of ecosystem and integrated management approaches in forest biodiversity.

Expanded programme of work on forest biological diversity

Programme element 1 – Conservation, sustainable use and benefit-sharing	
175. Is your country applying the ecosystem approach to the management of all types of forests?	
a) No (please provide reasons below)	
b) No, but potential measures being identified (please provide details below)	X
c) Yes (please provide details below)	
Comments on application of the ecosystem approach to management of forests (including effectiveness of actions taken, lessons learned, impact on forest management, constraints, needs, tools, and targets).	
<p>Being in its early stages of development, the ecosystem approach is gradually implemented into management of protected areas, including forests (particularly of nature reserves).</p> <p>Despite the fact that the National Report to the Fifth Session of the United Nations Forum on Forests does not mention any application of ecosystem approach, the latter is indirectly implemented in forestry, especially through training of forest guards. The tools used in forest management are especially adapted to that task: legal acts (the Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 (Law 558 date 24/7/96) and sectoral instructions (Guidelines for reforestation within the reforestation programme of the MoE; reforestation aiming at increasing watershed areas,etc).</p> <p>Under the Camp Project, the ecosystems are addressed together with their catchment’s basins in a comprehensive manner.</p> <p>Since ecosystem approach requires involving a wide range of experts and local stakeholders to ensure balanced way of the actions planned, a wide and open discussion process should be a part of the procedure thus avoiding dominance of narrow management approaches in the activities to be achieved. This is already initiated at the level of many projects.</p> <p>Probably the most obvious enabling environment for the implementation of the ecosystem approach is materialized in the Environment Impact Assessment (EIA) where the principles of the ecosystem approach have been implemented, recognizing that EIA is applied to various development projects if there is a risk of affecting ecological processes. In fact, the procedure requires that the scope of the assessment is done on level of ecosystems, not only on level of habitats and species affected and it requires full synthesis of information provided by various field experts to ensure integration of all aspects that might be causing possible changes in the ecosystems.</p>	

176. Has your country undertaken measures to reduce the threats to, and mitigate its impacts on forest biodiversity?		
Options	X	Details
a) Yes	X	<p>Please specify below the major threats identified in relation to each objective of goal 2 and the measures undertaken to address priority actions</p> <ul style="list-style-type: none"> ▪ The level of the threat of industrial pollution and degradation phenomena related to deposit of toxic compounds in forest ecosystems is declining due to changes in combustion usage, improvement in waste management and the obligation to using electro-filters in industry, etc. However, monitoring measures that help evaluate impact of pollution are in need of improvement. ▪ A serious threat is connected with the road transport development. ▪ An important and increasing threat is the process of fragmentation, simplification and geometrization of land use forms and developing urbanization and anthropogenic landscape pattern. ▪ Invasive species in forestry apparently do not cause serious problems because their occurrence is badly known. However, Assessment of the threat of alien species is foreseen in the NBSAP and its addendum. ▪ The uncontrolled production of charcoal used to constitute a major threat to the vegetation cover, as forests were totally harvested even on very steep slopes. This was frequently followed by intensive grazing as soon as the vegetation started to coppice again. The risk of occurrence of forest fires was very high during the charcoal production operations. A recent decree has totally forbidden the production of charcoal. However, forest protection system against forest fires is under optimization to increase efficiency. ▪ Uncontrolled timber harvesting and wood felling were undertaken in fragile upland ecosystems. Species like <i>Cedrus libani</i>, <i>Abies cilcica</i> and <i>Juniperus excelsa</i> were frequently illegally cut with no previous management plans. A law was issued to totally forbid the cutting of any resinous tree, even if dead. ▪ When the death of the tree is caused by an injury, a disease or an insect attack, the Ministry of Agriculture interferes to remove the dead trees and burn them if necessary, to prevent contamination to other trees and forests. ▪ Restrictions for forest clearings are elaborated in national legislation. ▪ The forest Resource Assessment (FRA) project funded by the FAO and executed by the MoA is building up a database on forest in Lebanon. The project is assessing all services and products provided by forests. A national forest policy will be developed further to the results obtained. ▪ A study of climate change was prepared by MOE-UNDP in 2001. In this study, expected impacts of climate change, vulnerability and adaptation measures were explored for bioclimatic zones, including forests. Another study of relevance to climate change issues has lead to the preparation of the National report in 2002, by the Ministry of Agriculture, on the implementation of the UNCCD. It discusses causes and effects of land degradation and formulates for them some mitigation measures.
b) No		Please provide reasons below
<p>Further comments on measures to reduce threats to, and mitigate the impacts of threatening processes on forest biodiversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).</p> <p>Measures undertaken are limited to regulations, these are:</p> <ul style="list-style-type: none"> ▪ The Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in facto (Law 558 date 24/7/96); ▪ Environmental Impact assessment required to prior to any project implementation under the Code of Environment (Law No 444 dated 8/8/2002); ▪ Draft law regulating the protection and management of nature reserves; ▪ A decree banning the quarrying activities in the whole Lebanese territories except in four sites located in the eastern Lebanese mountain ranges due to the scarcity of vegetation cover in this area among other reasons. Furthermore, this decree regulates the system of permits 		

in these sites and defines criteria and measures for the exploitation and rehabilitation (Decree No. 8803 dated 7/10/2002);

- Ministerial decisions declaring natural sites and river estuaries under the protection of the Ministry of Environment;
- Ministerial Decisions banning hunting over the entire Republic of Lebanon (1995 and 1997);
- Ministerial Decision issued by the Ministry of Agriculture regulates the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996);
- Ministerial Decision issued by the MoA regulates the harvesting of oregano and salvia (Decision 340/1 dated 1/8/1996);
- Ministerial Decision issued by the MoA prohibits the import and introduction of all cedar seeds and plants (Decision 108/1, dated 12/9/1995);
- New law to regulate hunting (No. 580 /04)
- Declaration of the protection of the fifteen forests explicitly by ministerial decisions issued from the MoA the amended Forest Code. However the MoA is in need of capacity building to effectively monitor recreational and economic activities or natural catastrophes within the reserves.

Initiatives to mitigate negative effects:

- Establishment of networks between AFDC, MOA and MOI to increase the number of firemen centers related to forest fires and build their capacity –Helicopters of the Lebanese Army were equipped with Bambi Buckets through a private sector initiative. However, further efforts have to be undertaken in order to prevent and combat forest fires.

Main threats identified to impact negatively of the forest cover:

- Forest fire
- Forest fragmentation
- Overgrazing and illegal woodcutting
- Strict protection
- Quarries and crushers
- Urban spreading and migration
- Agricultural land expansion
- Climate change
- Lack of public awareness
- Socio-economic settings

The needs are:

- Promote coordination between MOE and MOA
- Synergize efforts and restructure the Terms of reference of various institutions for forest management, monitoring, fire fighting and other actions
- Increase the forest guards number and build their capacities to protect forest biodiversity and monitor certain forest biodiversity indicators
- Address the socioeconomic needs of local communities in relation to alternatives to certain practices
- Valuation of forest biodiversity externalities, direct and indirect uses
- Amendments of regulatory measures and laws

177. Is your country undertaking any measures to protect, recover and restore forest biological diversity?		
Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities In 2001, the Lebanese government allocated a 25 billion Lebanese Pounds ("Loi Programme" number 326 date 28/6/2001) for the execution of a 5-year reforestation project at the national level. In that light, the Lebanese Ministry of Environment was handled the prerogative of initiating the National Reforestation Plan (NRP), aiming at the restoration of the country's green cover loss throughout the years.
b) No		Please provide reasons below

Further comments on measures to protect, recover and restore forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Despite the efforts deployed to protect, rehabilitate and restore forest biological diversity throughout the reforestation projects, the plan of action was not designed to fit in ecological needs and attributes. Assessment studies are not carried out or not accounted for especially that political influence is playing a major role in enforcing or selecting sites for restoration and rehabilitation.

Examples of initiatives undertaken to address these issues are:

- National biodiversity country study published in 9 volumes in 1996 by the MOA,
- The reforestation project done by the MOA in the Libano-Syrian mountain range whereby local species were utilized with some fruit trees to restore landscape,
- The reforestation project executed by the MOE,
- Private initiatives undertaken among which restoration plans developed by the AFDC for various sites. The association has established nurseries for production of local plant species in different Lebanese areas.

These reforestation programmes are increasing the forest green cover (the current cover estimated to be 12% of dense and scattered forests) as well as youth interest in forest conservation. However what is needed is a comprehensive forest management plan that would address the elaboration of species inventory present in the various sites of Lebanon; their identification, their value (economic, nutritional, medicinal, cultural and social), their status (rare or threatened), their monitoring and their ecological conditions.

178. Is your country undertaking any measures to promote the sustainable use of forest biological diversity?

Options	X	Details
Yes	X	<p>Please specify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities</p> <ul style="list-style-type: none"> ▪ The use of forest biodiversity among which NTFPs harvesting (nuts, culinary herbs, ornamental plants, economic plants and others), is regulated by laws and decrees: <ul style="list-style-type: none"> - A law issued for a complete ban of any resinous tree logging, even if dead. - A decree issued for the organization and control of harvesting and export of wild <i>Origanum sp.</i> and <i>Salvia sp.</i> The decree allows the harvesting after the flowering period. This ensures the sustainability of the species. Thus, the exploitation of the <i>Pinus pinea</i> forests for the production of the pine nuts is strongly encouraged, along with that of the <i>Ceratonia siliqua</i> for the production of the carob molasses, which is locally used and exported as a desert. - A Law for the Protection of the Environment in its Chapter 8 calls for an elaboration of a system for controlling access to genetic resources concerning management of natural resources and conservation of biological diversity. - A tax policy is being applied to encourage the production of pine nuts (or pinelets) from <i>Pinus pinea</i>. The Ministry of Agriculture has set a maximum price for the kilogram of pine nuts (20 USD) above which the top quality nuts should not be sold on the local market, in addition to imposing taxes on the import of nuts. This policy encourages the local production and boost the prioritization of the local products by the consumer: ▪ Free entrance into forests favors utilization of non-wood resources, which increases in certain regions and along communication routes and may cause problems with excessive exploitation of ground flora resources. Many forest plant species collected in the wild is covered with partial legal protection, and their collection at the commercial scale requires permit from the Ministry of Agriculture. As for plants in protected areas and animals all over the country are the responsibility of the Ministry of Environment. ▪ Regulations concerning use of game animals stem from the Hunting Law.
No		Please provide reasons below

		<p>Further comments on the promotion of the sustainable use of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).</p> <p>Despite the efforts deployed for launching and promoting awareness among local communities on the importance of forest biodiversity being a source of income, there is no real implementation of project aiming at sustainable use of forest resources. Therefore still the resources are over-exploited. Although three conventions have been ratified in this regard (Convention on Biological Diversity, Combating desertification convention and Climate Change convention) still there are constraints related to the enforcement of laws and the mainstreaming of action plans into implementation of activities. Given the shy initiatives undertaken, more coordination among ministries, contracting experts and providing needed equipments are needed to promote effective sustainable use of forest biodiversity.</p> <p>In fact and apart from certain laws that forbid the harvesting of certain aromatic and/or medicinal species such as <i>Salvia</i> and <i>Origanum</i> or laws related to coniferous trees, or laws related to NWFP usage, few studies were undertaken about sustainable uses of forests in Lebanon. These are a thesis developed or multidisciplinary study on perspectives for the sustainable use of cedar forest in Lebanon among which ranking system approach were developed to categorize cedar forests [and to some extent other natural habitat] relying on economic, social, biological and cultural attributes – (Sattout, E.J. 2004 – The University of Reading and AUB), Thesis undertaken at USEK and USJ (Abu Dib, S.).</p> <p>Private initiatives of sustainable use are undertaken:</p> <ul style="list-style-type: none"> ▪ In Arz-Shouf protected area whereby a management plan has been developed and activities such as grazing, honey production, handicrafts and ecotourism are promoted. ▪ The AFDC local units undertaking socio-economic surveys and developing local income generating activities; ▪ SPNL Hima approach encouraging traditions in some areas of the country.
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179. Is your country undertaking any measures to promote access and benefit-sharing of forest genetic resources?		
Options	X	Details
a) Yes		Please specify priority actions in relation to each objective of goal 5 and describe measures undertaken
b) No	X	Please provide reasons below The problem has not been sufficiently identified yet.
<p>Further comments on the promotion of access and benefit-sharing of forest genetic resources. (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets)</p> <p>Measures undertaken to promote access and benefit-sharing of forest genetic resources, basic studies (inventories of species, localization, etc) and mechanism to mainstream diverse and multiple activities undertaken by various ministries are needed especially that initiatives taken so far are at early stages of development.</p> <p>In that light, the MOA is in the phase of developing a policy and a national forest program that would address the elaboration of data inventories and subsequently the basics for promoting access and benefit-sharing of forest genetic resources. The MOE, there is a draft law about access and benefit sharing being prepared within the Biosafety national framework.</p>		

Programme element 2 – Institutional and socio-economic enabling environment		
180. Is your country undertaking any measures to enhance the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing?		
Options	X	Details

a)Yes		Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities
b)No	X	Please provide reasons below The problem has not been sufficiently identified, yet.
Further comments on the enhancement of the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		
The needs for measures to enhance the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing are: <ul style="list-style-type: none"> ▪ A clear mechanism for reforestation licenses, ▪ Imposing tax, ▪ Providing incentives, etc; The last point entail the need for incentives at social and economic levels for local communities elaborated within the framework of any forest biodiversity strategy; however there is a law being worked on for the mountain covers in coordination with the MOA and CDR. As for the MOE, there is a policy on sustainable use being elaborated however it needs also consultation with different stakeholders. As for the Lebanese Agricultural Research Institute (LARI), there is an initiative undertaken in relation to the valorization of medicinal plants since 1993 that would promote sustainable conservation and use of medicinal plants and would promote rural development. Some studies were undertaken in relation to sustainable use of forest biodiversity for example within the frame of the bioprospection project at AUB and through the initiatives of some private NGOs such as AFDC which have mainstreamed the necessity to establish a national forest fire center into the government institutions.		

181. Is your country undertaking any measures to address socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity?		
Options	X	Details
a)Yes		Please identify priority actions in relation to each objective of Goal 2 and describe measures undertaken to address these priorities
b)No	X	Please provide reasons below The problem has not been sufficiently identified, yet.
Further comments on review of socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		
There are no socio-economic studies carried out in relation to forest biodiversity; however there have been some initiatives undertaken by the MOE through the elaboration of policy for conservation and sustainable use and through strategic environment assessment; also through the MOA which is revising the law about usage of wood cutting in specific seasons for charcoal production and through private initiatives mainly hitting on the awareness components in relation to forest biodiversity. To add, the efforts deployed for elaborating preventive strategy accounting for potential projections for 2080 in relation to the invasive species, pollution and climate change.		

182. Is your country undertaking any measures to increase public education, participation and awareness in relation to forest biological diversity?		
Options	X	Details
a) Yes	<input checked="" type="checkbox"/>	<p>Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities</p> <p>In recent years, a broad range of educational activities, addressed to school pupils, students, teachers, tourists, local communities and other forest visitors were implemented (see below). Also during several projects public awareness campaigns were carried out, several booklets were produced and articles in regional magazines published.</p>
b) No	<input type="checkbox"/>	<p>Please provide reasons below</p>
<p>Further comments on measures to increase public education, participation and awareness in relation to forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).</p> <p>Public education, participation and awareness are being promoted through the MOE activities, National and international projects, schools and media. The framework of the protected areas project and the "Integrated Management of Cedar Forests in Lebanon in Cooperation with Other Mediterranean Countries", CDs and brochures are released.</p> <p>In relation to the topics addressed, they varied from importance of biodiversity, status of species (National Biodiversity Study in 1996 MOA) to techniques of conservation and mainly they are related to forest fragmentation and not to forest cover which has been half restored (13%). The stakeholders targeted through awareness campaigns were various (ministries, private sector, academic institutions and local communities)</p> <p>What are needed are laws that regulate measures and procedures for biodiversity and benefit sharing; also what are needed are courses about forest management and wildlife management in universities; training about forest ecosystem, identification of fauna and flora, identification of fire risks and management measures and trainings about reforestation techniques.</p>		

Programme element 3 – Knowledge, assessment and monitoring		
183. Is your country undertaking any measures to characterize forest ecosystems at various scales in order to improve the assessment of the status and trends of forest biological diversity?		
Options	X	Details
a) Yes	<input type="checkbox"/>	<p>Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities</p>
b) No	<input checked="" type="checkbox"/>	<p>Please provide reasons below</p> <p>Knowledge of forest ecosystem functions is very fragmentary and projects which would lead to an improvement in the situation are far from being sufficient.</p>
<p>Further comments on characterization of forest ecosystems at various scales (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).</p> <p>The MOA has undertaken a forest resource assessment in 2005 and a delimitation of forest ecosystem in 2005 within the frame of a project funded by FAO whereby 240 sites were monitored in a systematic approach to identify adapted species, socioeconomic values, threats and land use change; also the AFDC has worked on updating satellite images to define land uses and cover maps as well as a fire risk map and that in coordination with Greenline. As for the MOE it is within the protected areas project that characterization of ecosystems is being initiated. However what is needed is to develop a comprehensive framework to tackle forest biodiversity in its wider understanding. But as the economic importance of forest biodiversity is not ranked as priority yet efforts are still limited.</p>		

184. Is your country undertaking any measures to improve knowledge on, and methods for, the assessment of the status and trends of forest biological diversity?		
Options	X	Details
a) Yes	<input checked="" type="checkbox"/>	Please identify priority actions in relation to each objective of goal 2 and describe measures undertaken to address these priorities Several educational actions (see 182 above) and projects (see below) have been started but hardly could anyone indicate activities concerning better understanding or methods of evaluating biodiversity in forests.
b) No	<input type="checkbox"/>	Please provide reasons below
Further comments on improvement of knowledge on and methods for the assessment of the status and trends (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		
<p>At the MOE, there is a MSC project entitled capacity audit and action plan for reforestation (April 2005-november 2005) aiming at assessing the physical, human and institutional infrastructure needed for the elaboration of an environmental action plan for sustainable management of forests which might be indirectly related to biodiversity. The main activities would be related to identifying good techniques and methodologies of reforestation, good institutional framework, potential reforestation regions and potential lists of species to be used. Establish nurseries and traceability of seedlings.</p> <p>NEAP for Lebanon has assessed many aspects of relevance to forests in Lebanon, including status and trends.</p> <p>Also at the MOE there has been the LEDO project aiming at defining indicators for land use management.</p> <p>The Lebanese Agricultural Research Institute (LARI) has been undertaking an initiative in relation to the valorization of medicinal plants since 1993 that would promote sustainable conservation and use of medicinal plants and would promote rural development. Further it has developed a strategy concept for herbal, medicinal and aromatic plants but it's not yet implemented.</p> <p>The bioprospection project has developed line of studies related to bio use of resources – it's a collaborative fund from OHIO University at AUB.</p> <p>In 2002 there has been a project about land use planning entitled "Schema d'aménagement du Territoire Libanais" funded by the CDR.</p> <p>What is needed is a forest policy that defines a clear mechanism and players in forest management; also what is needed is to create disciplines in universities that tackle forest biodiversity; develop inventories and document knowledge for trends and status of resources.</p>		

185. Is your country undertaking any measures to improve the understanding of the role of forest biodiversity and ecosystem functioning?		
Options	X	Details
a) Yes	<input type="checkbox"/>	Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No	<input checked="" type="checkbox"/>	Please provide reasons below Institutes and organizations aimed at improving or broadening knowledge of biodiversity role in functioning of forest ecosystems are very rare in forestry research.
Further comments on the improvement of the understanding of the role of forest biodiversity and ecosystem functioning (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		
The majority of the projects carried out and the bulk of action plans developed by ministries are focusing on the rationale of having forests as a threatened resource i.e. necessitating protection however what is needed is to move forward and look for forest functioning projects that might		

promote sustainable use especially that since seven years the date of launching protected areas no major losses have been recorded for forests covers and it's time to benefit from forests. For that sake the new strategy that would be released by the MOE will highlight sustainable use of resources; as for studies related to that field, some studies were undertaken in this regard for example within the Agrobiodiversity project, there is a study about "Assessing the potential uses of wild fruit trees in northern Drylands of the Beqaa (AKL, M, 2002)". Also within university studies there has been a study about the economic value of forest in Lebanon, the production uses, the ecosystem function and valuation of medicinal plant and charcoal production.

186. Is your country undertaking any measures at national level to improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biodiversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below Insufficient financial and human capacity.

Further comments on the improvement of the infrastructure for data and information management (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Measures undertaken to improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biodiversity are limited to the frame of certain projects. However, recent efforts at MOA have resulted in the launching of a national forest inventory website within the frame of the project of Forest resource assessment funded by FAO but still further work is needed in various fields of expertise especially in relation to the establishment of herbarium and databases, systematic localization of species, elaboration of national policy and formulation of curricular disciplines on forest biodiversity related issues.

Box LXXI

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Main outcomes are amendments of legislations and increased knowledge for improvement of Plans and actions. However, these legislations and many activities fulfill the requirements laid down in the Extended Programme and may be interpreted as the programme implementation.

Actions undertaken and described in above section contribute to the achievement of all 4 main Goals of the Strategic Plan of the Convention. The actions undertaken contribute to progress towards the 2010 target. The actions undertaken also contribute to the implementation of the Millennium Development Goal 7 *Ensure environmental sustainability*.

The main disadvantage of the current situation consists in the weak knowledge of the ecosystem functioning and in the lack of multidisciplinary expertise that is needed to better application of ecosystem approach. An improvement may follow increase of restrictions for forest use for biodiversity protection reason, establishment of new protected areas and amendments to technical and economic documents: Forest Management, Forest Breeding Principles and Forest Protection.

Forest areas located within the protected areas have been already or will be provided with special protection plans (management plans) which additionally regulate principles of forest management, with special emphasis on biodiversity conservation of forest ecosystems.

Biological diversity of dry and sub-humid lands

187. Is your country supporting scientifically, technically and financially, at the national and regional levels, the activities identified in the programme of work? (decisions V/23 and VII/2)	
a) No	
b) Yes (please provide details below)	x
Further comments on scientific, technical and financial support, at the national and regional levels, to the activities identified in the programme of work.	
<p>A five-year regional project (1999-2004) funded by the GEF and implemented by the Lebanese Agriculture Research Institute (LARI) and UNDP brought together several international organizations. Jordan, Syria and the Palestinian Authority and Lebanon were partners in implementing and reaching targets of 'The Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East project'. Many experts were involved in this project to characterize the floristic richness and study the genetic diversity and potential uses of selected species in arid and sub-arid ecosystems among others. The project aimed at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing in-situ and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot sites located in arid and sub-arid mountainous areas in Lebanon. Project sites were selected following certain criteria and a farm socio-economic survey and botanical surveys were completed. GIS soil and land cover maps are almost completed. Several approaches were followed by the project in order to achieve short-term training for technical staff and farmers, and integrating the project activities with activities conducted by other institutions and other projects working in the same area.</p> <p>A Memorandum of Understanding (MoU) has been signed between the Ministers of agriculture in Lebanon, Jordan, Syria and the Palestinian Authority in 2005 to promote the conservation of Agrobiodiversity and to set a system for the exchange of Plant Genetic Resources among the four countries.</p>	

188. Has your country integrated actions under the programme of work of dry and sub-humid lands into its national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD? (decisions V/23, VI/4 and VII/2)	
a) No	
b) Yes (please provide details below)	X
Further comments on actions under the programme of work of dry and sub-humid lands integrated into national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD.	
<p>The National Action Plan to combat desertification (2003) has been developed under a project executed by the Ministry of Agriculture in Lebanon with the technical support of UNDP and GTZ. The NAP has been developed further to:</p> <ul style="list-style-type: none"> ▪ Data compilation; ▪ Establishment of Combating Desertification Information System (CODIS) ▪ Preparation of maps taking into consideration climate, soil, vegetation cover, land use and demography; ▪ Definition of Desertification Prone Areas (DPA); ▪ Public consultation with government agencies; local communities in affected areas; cooperatives and other community-based organizations. <p>The NAP is a framework demonstrating strategic vision on the actions needed for combating land degradation in Lebanon. Action plans have been developed and briefing on project proposals have been prepared in the different sections :</p> <p>I. Institutional framework, II. Legislative framework, III. Land use planning, IV. Socio-economic frame conditions, V. Forest management, VI. Sustainable agriculture, VII. Rangeland management, VII. Soil conservation, VIII. Protected Areas.</p> <p>Under Ramsar Convention, the MedWetCoast Project also contributes to the programme of work of dry and sub-humid lands and works towards the sustainable and wise use of wetlands in Lebanon</p>	

through preventing overexploitation of water, drainage, protection of biodiversity, wetland modification into agricultural areas; and through providing an adequate framework and operational tools for cooperation and transfer of know-how and expertise.

189. Has your country undertaken measures to ensure synergistic/collaborative implementation of the programme of work between the national UNCCD process and other processes under related environmental conventions? (decisions V/23, VI/4 and VII/2)

a) No	
b) Yes, some linkages established (please provide details below)	X
c) Yes, extensive linkages established (please provide details below)	

Further comments on the measures to ensure the synergistic/collaborative implementation of the programme of work between the national UNCCD processes and other processes under related environmental conventions.

A new project the "National Capacity Self-assessment for Global Environmental Management (NCSA)" was launched in October 2005. The project is funded by GEF, managed by the UNDP and executed by the Ministry of Environment.

The main objective of the NCSA project is to identify and assess capacity constraints in the implementation of the three United Nations environmental conventions: Convention on Biological Diversity, United Nations Framework on Climate Change and the United Nations Convention on Combating Desertification and to prepare accordingly a National Strategy and Action Plan. In addition, the project will seek to determine the necessary mechanisms at the institutional and functional levels to address these constraints and explore ways of creating a higher degree of linkages and synergies between the conventions.

The project will last for 18 months and will execute the following tasks:

- Explore and develop links and synergies among on-going environmental management and sustainable development projects and programs pertaining to the three UN environmental conventions
- Optimize coherent outputs pertinent to capacity development
- Updating environmental legislation
- Establishment of integrated capacity building systems

Programme Part A: Assessment

190. Has your country assessed and analyzed information on the state of dryland biological diversity and the pressures on it, disseminated existing knowledge and best practices, and filled knowledge gaps in order to determine adequate activities? (Decision V/23, Part A: Assessment, Operational objective, activities 1 to 6)

a) No	
b) No, but assessment is ongoing	
c) Yes, some assessments undertaken (please provide details below)	X
d) Yes, comprehensive assessment undertaken (please provide details below)	

Further comments on the relevant information on assessments of the status and trends and dissemination of existing knowledge and best practices.

The National Action Programme to Combat Desertification - prepared under the UNCCD project executed by the MoA and technically supported by the UNDP and GTZ - has defined areas prone to desertification in the country. The development of maps has relied on existing information and on new assessment of demographic, climatic and physiographic data.

Studies and initiatives made boosting the analysis of information are the following:

Along with Jordan, Syria and the Palestinian Authority, Lebanon is a partner in 'The Conservation and Sustainable Use of Dryland Agrobiodiversity in the Near East project'. This five-year project (1999-2004) is funded by the GEF and implemented by the Lebanese Agriculture Research Institute (LARI) and UNDP and brings together several international organizations. Implementing partners include several local academic and research institutions and NGOs. Many experts were involved in this project to characterize the floristic richness and study the genetic diversity and potential uses of selected species. The project aims at promoting the conservation and preservation of important wild relatives and landraces of agricultural species by introducing and testing in-situ and on-farm mechanisms and techniques of conservation and sustainable use of agro-biodiversity in three pilot

sites located in the Beqa'a plain in Lebanon. The four participating countries exchange technologies, methodologies and information towards sustainable use of biological diversity. Several training sessions, workshops and thematic meetings were conducted at the regional level. Within Lebanon, the project concentrated on several target crops (wild relatives and landraces/ varieties) including wheat, barley, lentils, vetch, *Lathyrus*, medics, and clover, as well as apricots, cherries, almonds, plums, pears, pistachio, figs, and *Allium* species. In addition, the seed cleaning Unit of the project has distributed in early 2005 more than 10 tons of cleaned landraces seeds of wheat, barely, chickpea and lentils to more than 70 local farmers in the project sites of Nabha, Aarsal and Ham/Maaraboun.

On the other hand, many species targeted by the Agrobiodiversity project are forage legumes. These species are under threat mainly due to overgrazing. The project established several demonstration sites in Aarsal and Nabha to show the effect of protection, reseeding with native legumes and water-harvesting techniques on rangeland rehabilitation.

A collaborative agreement between Lebanon and the Royal Botanic Gardens Kew provides grants to promote conservation and sustainable use of biodiversity and includes an element of assessment of species in arid and sub-humid lands. This partnership between Royal Botanic Gardens Kew and Lebanon/LARI, one of 15 partnerships of the Millennium Seed Bank (MSB) project, is based on a legally binding Access and Benefit Sharing Agreement. Benefits are provided by the MSB project, KEW to LARI in the form of small seed equipment and training of staff in seed technology. The five-year agreement will expire in July 2005 but will be renewed for another 5 years if both sides agree.

The Forest Resource Assessment (FRA) project executed by the MoA and funded by the FAO has indirectly assessed biological diversity in arid and sub-humid lands. The project intends helping government assess and improve their forest management through inventories of forest and tree resources, including their uses and benefits; with the aim of enabling the government to evaluate problems in its forest management, which contributes to suitable policies and legislation. The project covers a total surface of 36000 hectares in the various regions in Lebanon and it has assessed and surveyed the biological, social, economic and physiographic conditions of sites and surrounding villages. The inventories elaborated would be monitored each five years

Programme Part B: Targeted Actions

191. Has your country taken measures to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences? (part B of annex I of decision V/23, activities 7 to 9)

a) No	
b) Yes, some measures taken (please provide details below)	X
c) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences.

Measures taken are indirectly integrated in various initiatives, draft laws and projects:

- Draft Law on access and benefit sharing,
- Forest policy developed through the FRA project (FAO & MoA project),
- Five-year plan reforestation programme executed by the MoE is involving municipalities in the monitoring and management process which can be an initiative boosting community involvement in biodiversity conservation and land restoration in arid and sub-humid lands, decentralization of institutions and cooperation.

192. Has your country taken measures to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work?

a) No	
b) Yes, some measures taken (please provide details below)	
c) Yes, comprehensive measures taken (please provide details below)	X
d) Yes, all identified capacity needs met (please provide details below)	

Further comments on measures taken to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work.

The strengthening of the programme of work has been initiated through various projects, these are:

- FRA project (MoA & FAO),
- NAP (MoA, GTZ, UNDP),
- PAP (GEF, UNDP, IUCN),
- MedwetCoast,
- ARAL Project envisage in its extension phase strengthening local capacities for the conservation and sustainable use of biodiversity some in arid and sub-humid lands

Box LXXII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Drylands are priority habitats for Lebanon; though the Ministry of Environment and the Ministry of Agriculture work to address issue of the degradation of dry and sub humid lands through the United Nations Convention to Combat Desertification (UNCCD) and Climate Change. The UNCCD recognises the linkages between land degradation and poverty. Accordingly, Lebanon believes that there should be more effort made to mainstream prevention of land degradation into development processes. This mainstreaming approach is the one MoE takes. Subsequently, the actions taken in Lebanon work towards the goals of the UNCCD as part of outcomes. Lebanon is one of the three geographical foci for the Royal Botanic Garden, Kew; and has collaborated to its workprogrammes through collections, baseline plant diversity research, sustainable utilization of plant resources and conservation and environmental monitoring, where all include significant activity related to drylands. Most projects in Lebanon are carried out at regional level, and all of these more or less operate in accordance with the Access and Benefit Sharing provisions of the CBD. Capacity Building is a key element in most of these projects. Lebanon, through LARI, is also partner to the largest single Kew project, the Millennium Seed Bank Project which focuses on the dryland areas. The main outcomes of this partnership are joint seeds collection aiming at enhancing technology transfer. Seed technology transfer to LARI is an ongoing activity involving the training of few LARI staff on seed technology and providing some seed-related equipment to LARI's seed laboratory such as a seed blower, magnifier lenses, seed storage freezers and supplies needed for seed storage and herbarium establishment.

Apart from Climate change and desertification, inadequate capacity to act due to institutional weaknesses and human resources, insufficient transfer of technology, traditional knowledge, financial resource and absence of economic incentive are some of the constraints to implement the programme of work.

Mountain Biodiversity

Programme Element 1. Direct actions for conservation, sustainable use ad benefit sharing

193. Has your country taken any measures to prevent and mitigate the negative impacts of key threats to mountain biodiversity?

a) No	
b) No, but relevant measures are being considered	
c) Yes, some measures taken (please provide details below)	X
d) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to prevent and mitigate the negative impacts of key threats to mountain biodiversity

Mountain Biodiversity in its intrinsic value is not overlooked independently from other biodiversity thematic areas in Lebanon. The prevention and mitigation of negative impacts of key threats* are implemented through indirect measures consisting of regulatory measures and initiatives undertaken. These are:

- The Forest Code (Law 85 date 12/9/1991), amended by the Parliament in 1996 stipulates that all cedar, fir, juniper forests and "other coniferous forests" in Lebanon are protected in facto (Law 558 date 24/7/96);

- Environmental Impact assessment required to prior to any project implementation under the Code of Environment (Law No 444 dated 8/8/2002);
- Draft law regulating the protection and management of nature reserves;
- A decree banning the quarrying activities in the whole Lebanese territories except in four sites located in the eastern Lebanese mountain ranges due to the scarcity of vegetation cover in this area among other reasons. Furthermore, this decree regulates the system of permits in these sites and defines criteria and measures for the exploitation and rehabilitation (Decree No. 8803 dated 7/10/2002);
- Ministerial decisions declaring natural sites and river estuaries under the protection of the Ministry of Environment;
- Ministerial Decisions banning hunting over the entire Republic of Lebanon (1995 and 1997);
- Ministerial Decision issued by the Ministry of Agriculture regulates the export of all medicinal and aromatic plants (Decision 92/1 dated 27/2/1996);
- Ministerial Decision issued by the MoA regulates the harvesting of oregano and salvia (Decision 340/1 dated 1/8/1996);
- Ministerial Decision issued by the MoA prohibits the import and introduction of all cedar seeds and plants (Decision 108/1, dated 12/9/1995);
- New law to regulate hunting (Law no...);
- Declaration of the protection of the fifteen forests explicitly by ministerial decisions issued from the MoA the amended Forest Code. However the MoA is in need of capacity building to effectively monitor recreational and economic activities or natural catastrophes within the reserves;
- The Agrobiodiversity project is implemented in four countries (Lebanon, Jordan, Syria and the Palestine authority), the project aims at the conservation and sustainable use of drylands agrobiodiversity in the mountainous areas and the four countries are applying the same methodology to achieve this goal and are exchanging information and experience.
- Lebanon is part of the MedWet Coast project which is a regional project aiming at the conservation of biodiversity and the proper management of coastal areas and wetlands. The project is implemented in Lebanon, Egypt, Palestine Authority, Albania, Morocco and Tunisia. In Lebanon, two sites are managed by this project, one of which is a wetland located in mountain ecosystem.
- A Sub-Regional Action Plan (SRAB) is being implemented by UNEP/ROWA with the collaboration of ACSAD and ICARDA within the context of the UNCCD. Within this SRAP, a pilot project on mountain agriculture including grazing management will be implemented soon in Lebanon and in Yemen.
- Reforestation plans for 5 years implemented by the MoE in collaboration with municipality.

Laws and regulations in process of endorsement:

- A draft decree on Environment Impact assessment was prepared by the MoE and is currently under endorsement. This will establish a legal framework by which all major development, infrastructure and industrial projects will have to undergo an EIA before receiving approval and permits. The EIA concept was endorsed through the Law for the Protection of the Environment (Law no. 444/02), and details related to various steps of EIA (such as screening, scoping, review and monitoring) have been included in a draft decree prepared by the MoE and currently under review at the Council of Ministers. The EIA draft decree will establish the legal framework by which all major development, infrastructure, industrial and agriculture projects will have to undergo an EIA in order to promote conservation activities before receiving approval. Although the EIA decree has not yet been issued, EIA is frequently conducted and reported, especially that the MoE requests such assessments before approving various projects.
- The Ministry of Environment has prepared a draft framework law for the establishment and management of nature reserves in Lebanon; the draft law is currently in the process of endorsement.
- Draft law on access and benefit sharing of genetic resources;
- In addition to the EIA, in late 2002, the MoE started the implementation of a project, the "Strategic Environment Assessment" (SEA), as a tool to mainstream environmental sustainability in public planning and decision making and to mainstream environmental considerations into sectoral plans and programs. The project is funded by EC LIFE-Third Countries and managed by UNDP and will last till 2005. The SEA project prepared a draft decree for the implementation of SEA at the national level based on the definition set in the Law for the Protection of the Environment (Law no. 444/02), stating that "any program, study, investment or planning proposal covering a Lebanese region or an entire production

sector [and] likely to affect the environment due to their size, nature, impacts, or types of activities" will have to be assessed for potential environmental impacts prior to approval. This also applies to "any amendment, addition, expansion or review" of such proposals (Articles 21 and 22).

* Key threats on mountain biodiversity in Lebanon are: Deforestation, soil erosion and land degradation, overgrazing and human activities.

194. Has your country taken any measures to protect, recover and restore mountain biodiversity?

a) No	
b) No, but some measures are being considered	X
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to protect, recover and restore mountain biodiversity

Measures taken at present to recover and restore mountain biodiversity are implemented through the 5 years reforestation plan executed by the MoE.

Measures to be taken are defined further to:

- Results obtained from the project entitled "Schéma Directeur d'Aménagement du Territoire Libanais" (SDATL): The project executed by CDR/DAR-IAURIF took into account nature resources conservation and sustainable use in mountain areas. The project has prepared a National Physical Master Plan and priority action programs. It has put scenarios and strategies for optimal use of land resources. An updated land use land cover map was produced.
- Project on Important Birds Areas (IBAs) executed jointly by Birdlife International and a Lebanese NGO (SPNL) will define IBAs in mountainous areas. Though measures will be taken accordingly to protect, recover and restore mountain biodiversity (Birds).

195. Has your country taken any measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems?

a) No	
b) No, but some measures are being considered	x
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems

Measures considered consists of articles developed in the following draft laws:

- Draft Law on Access and Benefit Sharing,
- Draft law on protection and management of nature reserves.

Assessment and basic studies are still needed to be used as primary tools for the definition of measures to promote the sustainable use of mountain biological diversity and to maintain genetic resources.

Many studies and initiatives have been undertaken. These are

- Project done by the NCRS and The Mediterranean Agronomic Institute of Bari institute on mountain products in 2003
- American University Studies on genetic diversity of Almond in 2002 and 2003,
- LARI studies on Wild relatives species (Apricots, Almond, Garlic, etc.) in 2002.

196. Has your country taken any measures for sharing the benefits arising from the utilization of mountain genetic resources, including preservation and maintenance of traditional knowledge?

a) No	X
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures for sharing the benefits arising from the utilization of mountain genetic resources

Programme Element 2. Means of implementation for conservation, sustainable use and benefit sharing

197. Has your country developed any legal, policy and institutional framework for conservation and sustainable use of mountain biodiversity and for implementing this programme of work?

a) No	x
b) No, but relevant frameworks are being developed	
c) Yes, some frameworks are in place (please provide details below)	
d) Yes, comprehensive frameworks are in place (please provide details below)	

Further comments on the legal, policy and institutional frameworks for conservation and sustainable use of mountain biodiversity and for implementing the programme of work on mountain biodiversity.

Please refer to Question Programme Element 1. – Questions 193

Additional legal, policy and institutional framework involve:

- A draft law on the protection of mountain summits (MoE)
- The conservation of mountainous areas report (MoE strategy -November 2005)

However, these initiatives are still limited to general frameworks and not yet mainstreamed into real studies, nor inventories and action plans.

198. Has your country been involved in regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity?

a) No	
b) No, but some cooperation frameworks are being considered	x
c) Yes (please provide details below)	

Further information on the regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity

A bilateral agreement was signed between Lebanon and Syria in 2000 to reforest the libano-syrian mountain range.

Programme Element 3. Supporting actions for conservation, sustainable use and benefit sharing

199. Has your country taken any measures for identification, monitoring and assessment of mountain biological diversity?

a) No	
b) No, but relevant programmes are under development	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for identification, monitoring and assessment of mountain biodiversity

Direct measures for identification, monitoring and assessment of mountain biodiversity are implemented through the requirement of an environmental impact assessment further to any project implementation. These are mandated under the Code of the environment (Law 444).

Meanwhile various initiatives have been undertaken which can be 'case' under the programme element, these are:

- The Biodiversity Country Study contains an inventory of fauna and flora in the different ecosystems in Lebanon including terrestrial, fresh water and agricultural habitats.
- Inventory of fauna and flora was conducted in three mountain sites (two terrestrial nature reserves and one marsh) including identification of threatened, rare and endemic species in addition to the species of economic importance (Through the Protected Areas Project, MoE/UNDP).
- The Ministry of Environment through the Protected Areas Project has developed a monitoring

programme for the biodiversity in three protected areas.

- Collection and ex-situ conservation of Lebanese wild plants (including the mountain areas) are undertaken by LARI.
- The Ministry of Agriculture is preparing an index of entomo-fauna in a mountain Nature Reserve (Tannourine Cedars Nature Reserve)
- A preliminary inventory of flora and fauna was conducted in the Yammouneh Nature reserve within a GEF PDF-A.
- An encyclopedia of medicinal plants was prepared by Mr. Michel Hayek (researcher in LARI), it includes many volumes containing list of all Lebanese medicinal plants with description of their characteristics, values, benefits and way of use.
- The Ministry of Agriculture and FAO has issued the results of the Forest Resource Assessment Project. The project involved the assessment, monitoring and evaluation of forest resources in all the Lebanese areas.
- The land use management plan developed by the CDR and defining identification, assessment and monitoring of various eco-zones.

However, no real implementation or plans have been elaborated based on these studies yet.

200. Has your country taken any measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity?

a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity

Under the umbrella of nationwide project entitled "Strengthening of National Capacity and Grassroots in situ Conservation for Sustainable Biodiversity Protection", techniques for Flora identification and monitoring through a multifaceted cooperation were transferred to the Management teams in three reserves.

The project started in November 1996 and was executed by the Ministry of Environment, managed by the United Nations Development Programme (UNDP) with the financial support of the Global Environmental Facility (GEF) and with the technical support of the World Conservation Union (IUCN). The funds were allocated for 5 years with an additional two year extension. The project, which covered two cedar forests (Al-Shouf cedar reserve and the Ehden nature reserve) focused on the integration of biodiversity conservation and sustainable human development, and was designed to safeguard endemic and endangered species of flora and fauna and to conserve their habitats (Anonymous, 1996; Abu-Izzeddin, 2000). The project initially intended to involve local communities in the management plan of the reserve. At later stages sustainability constituted the main aim. The uniqueness of this project was the proposed partnership model whereby the MOE, local and international NGOs and 'in-country' scientific institutions cooperated and coordinated their activities to promote both long-term ecological and short-term economic objectives of wildlife conservation and sustainable use of natural resources. The MOE as the government counterpart institution was responsible for providing oversight and guidance to the project (Anonymous, 1996; Abu-Izzeddin, 2000).

- Since 1993 the Lebanese Agricultural Research Institute (LARI) has been carrying out research in relation to the Lebanese medicinal plants. This ongoing operation is of vital importance especially that Lebanon is rich in agrobiodiversity; the fact that might enhance the progress of medicine in the agricultural sector and would allow endangered species find a field of valorization in the food industry sector which will help in preserving them and ensuring a potential new income to the Lebanese industry. Ways should be found to cultivate these species and prove their status as being sustainable resources for the Lebanese economy in a way that would enhance women labor in poor rural areas thus would have a positive impact on rural development. However there are constraints encountered in this field related mainly to the limited cooperation with local and regional scientific institutions working on herbal, medicinal and aromatic plants.

To note that a conceptualization of a strategy of herbal, medicinal and aromatic plants from Lebanon has been elaborated in the Lebanese Agricultural Research Institute (LARI); a strategy that included components of valorizing medicinal and aromatic plants; defining their

ecology, classification, cultures, research methodology, utilized techniques, phytochemistry, usage and medical industry based on plants; in addition this strategy has highlighted suggestions for the Lebanese norms, procedures for controlling medicinal and aromatic plants, procedures for improving their production and ensuring quality control, as well as aspects related to trade, economic goals and aspects related to the consumption of medicinal and aromatic plants. However this strategy is still not applied.

The cooperation between academic institution (The American University of Beirut), Non-Governmental Organization (GreenLine-A Scientific Association for Conservation) and the management teams in the reserves (Al-Shouf, Ehden and Palm Island) have initiated the preparation of local herbaria for the each reserve where the basic techniques and practices for their establishment were given through training workshop, weekly follow up visits to the reserves and to some point proceeding with participatory practices to identify flora species at the Post Herbarium at the American University of Beirut. The approach was successful, what was needed after the project ended was a serious follow up from the Management teams. The transfer of techniques and knowledge has been successful in Al-Shouf reserve where the specimen identified and other knowledge transferred has helped to an important extent to establish an educational centre for scholars with several programmes related to flora and environmental education.

The monitoring programme designed in participation with members of the management teams was foreseen to be applied by defined members of the management teams. This was controversial to what has been planned at the beginning of the project. It was decided that the NGO sub-contracted on Flora and Fauna Monitoring will conduct the monitoring programme. To ensure sustainability of the monitoring related activities and a serious follow up on the designed programmes, it was proposed that the techniques and practices must be transferred to the management team with a short and intense follow up by the experts and than the management team of the reserve take the lead on these tasks. The main concern was that management teams and/or local communities involved are the principal 'reserves' "watcher" and they are present all the time. The transfer of techniques was successful but the sustainability of these activities were pending, this latter point underpins the importance of availability of funds and for the consideration of monitoring programmes as essential and priori tools for good natural resources management on the long terms.

The Bioprospection project launched by AUB in 2002. Bioprospection is an alternative to diversify the agro-industrial portfolio in Lebanon. The purpose of this collaborative project is to rely on biotechnology to generate new plant-derived commercial products from indigenous Lebanese plants. The collaboration is between several Faculties at the American University of Beirut (Lebanon), Ohio State University (USA) and the University of Toledo (OH, USA).

201. Has your country taken any measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems?

a) No	
b) No, but relevant programmes are under development	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems

The MOE strategy will need to highlight measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems (November, 2005).

Box LXXIII .

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Lebanon has undertaken various activities leading to preservation of mountain ecosystems' biodiversity, as well as leading to sustainable development in mountain regions. The most important ones are the following:

- supporting establishment of protected areas (5 mountainous PAs out of 7 declared by law)
- supporting activities of local, non-governmental environmental organizations (through financial support from MoE against adequate project proposals and endorsement of projects)
- supporting conservation of mountain through awareness campaigns
- supporting sustainable use through training and capacity building
- supporting initiatives concerning ecological agriculture, preserving traditional forms of farming and biofarming, promotion of agrotourism, agrofood, ecotourism and rural tourism
- implementation and supporting environment friendly technologies
- supporting scientific, technical and economic cooperation
- modernization of the waste management and power industry
- development of educational systems and environmental information, as well as access to information on the environment

Summing up Lebanon's participation in implementation of the program "Biodiversity of mountain areas" and the Strategic Plan for the Convention, it should be noted that there are various strategies, plans and programs, both on the national and regional level in place, and that biodiversity conservation of mountain regions has been included into the national strategies, especially the Protected area strategy in 2005. In addition, programmes, aiming at developing communication and community participation in deciding about improvement of mountain ecosystems condition, are being implemented and promoted (local communities are involved into implementation of mountain biodiversity conservation. Subsequently, awareness has increased on biodiversity conservation. Capacity for reforestation of barren hills improved as an outcome of training programmes. Social forestry campaign has been implemented in the mountain area which helped to rehabilitation of burned hilly area. Establishment of new PAs, etc.

The described activities lead to implementation of the "2010 Target" in mountain areas, through:

- Decrease in loss of natural values in mountain ecosystems,
- Promotion of wise use of mountain ecosystems, aiming at preserving the natural landscape in the mountains,
- Promotion for conserving traditional knowledge and technologies.

The described activities also lead to the implementation of the Millennium Development Goals in mountain areas, specifically Goal 7 (*ensuring sustainable development*).

The most important constraints making the "Biodiversity in Mountain Areas" program difficult to implement included: insufficient participation and interest of the public and local interest groups in decisions and activities connected with biodiversity protection, constant migration of qualified and educated workers to large cities, leading as such to a loss of traditional knowledge. There are also limited possibilities of undertaking proper scientific studies. Studies in the field of biodiversity conservation are rather irregular, of contributory character which is caused by short-term and unstable financial resources, as well as from small subsidies for basic research, such as nature inventories and monitoring of conservation measures.

Institutional weakness at the level of some local authorities, poverty in some rural areas and short term priorities for locals, lack of inter-sectoral coordination, lack of human capacity and lack of financial resources add to all these constraints.

E. OPERATIONS OF THE CONVENTION

202. Has your country actively participated in subregional and regional activities in order to prepare for Convention meetings and enhance implementation of the Convention? (decision V/20)	
a) No	
b) Yes (please provide details below)	X
Further comments on the regional and subregional activities in which your country has been involved.	
<p>The UNEP/GEF Biodiversity Planning Support Programme (BPSP) is a global programme aimed at strengthening national capacity to prepare and implement strategies and action plans related to Biodiversity. Launched in 1999, the BPSP seek to draw upon the tremendous wealth of experience generated by biodiversity initiatives around the world, and to promote information sharing, the development on best practices guidelines and regional and international exchange.</p> <p>The regional BPSP for the Middle East and North Africa has been covering the 17 countries of the Arab States: Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman,</p>	

Palestine, Qatar, Saudi Arabia, Syria, Tunisia, UAE and Yemen. Lebanon hosted the regional coordination for the Northern Arabian Peninsula.

The main aim of the project is to provide a platform for exchanging information, knowledge and expertise about biodiversity planning between the parties in the Arabic region.

The project included the following components:

- Development of user-friendly information on NBSAP development and implementation,
- Production of 3 issues of a regional newsletter the Arabio ,
- Establishment of bioplan list server and web-site to provide a platform for exchange and dissemination of information about biodiversity,
- Preparation of a regional guide to biodiversity services to help government effectively draw on regional and global biodiversity expertise.

Even though the project ended in 2000, the Bioplan list server continued to be managed, posted and prepared till 2005 by the IUCN Biodiversity Thematic programme based in Beirut at the Greenline Association (NGO) location.

The Bioplan list server brought together a wide variety of planners and experts including:

- NBSAP planning teams and coordinators,
- Country focal points for the CBD, GEF and Clearing House Mechanism,
- Technical Staff from GEF implementing agencies (UNDP, UNEP, and the world bank0,
- Technical staff from the CBD and GEF secretariats,

Experts from a wide range of other organizations, including IUCN, WWF, WRI, MEDFOREX, etc.

The IUCN Biodiversity Thematic programme which has been functional from Lebanon for a period of two years has worked on the preparation of National Biodiversity Focal Points and other national experts and planners from the Arab States region to participate in the Conference of the Parties meeting. The initiative has been taken in 2002, however it was not done regularly and since this date no preparatory meetings for COP were held in the region.

203. Is your country strengthening regional and subregional cooperation, enhancing integration and promoting synergies with relevant regional and subregional processes? (decision VI/27 B)

a) No	
b) Yes (please provide details below)	X

Further comments on regional and subregional cooperation and processes.

Regional and subregional cooperation were promoted through the BPSM mentioned in question 202 above and in some initiatives undertaken by the Council of Arab Ministers responsible for Environment (CAMRE) under the Arab league and by the regional centers mainly ACSAD.

The following question (204) is for DEVELOPED COUNTRIES

204. Is your country supporting the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes? (decision VI/27 B)

a) No	
b) No, but programmes are under development	
c) Yes, included in existing cooperation frameworks (please provide details below)	✳
d) Yes, some cooperative activities ongoing (please provide details below)	

Further comments on support for the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes.

The question does not apply to Lebanon.

205. Is your country working with other Parties to strengthen the existing regional and sub-regional mechanisms and initiatives for capacity-building? (decision VI/27 B)

a) No	
b) Yes	X

206. Has your country contributed to the assessment of the regional and subregional mechanisms for implementation of the Convention? (decision VI/27 B)	
a) No	X
b) Yes (please provide details below)	
Further comments on contribution to the assessment of the regional and subregional mechanisms.	

Box LXXIV.

Please elaborate below on the implementation of the above decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

The BPSP programme was the main regional programme implemented in order to strengthen the capacity of parties for the implementation of CBD and to enhance cooperation (it included 17 countries as mentioned under the question 202).

However, cooperation between parties to the Convention is taking place as well within the context of regional projects mainly among the Middle Eastern countries (e.g. Agrobiodiversity project: Lebanon, Jordan, Syria, Palestine) and to a lesser extent among Mediterranean countries and/ or Middle East-North African countries, examples: SAP_BIO project; MedWetCoast project (Lebanon, Albania, Egypt, Morocco, the Palestinian Authority and Tunisia); Integrated Management of Cedar Forests project (Algeria, Cyprus, Lebanon, Morocco, Syria and Turkey); Economically Important Wild Plant Species project (Lebanon, Egypt, Morocco and Turkey).

Participation in regional and sub-regional mechanisms which contribute to the implementation of the Convention involves a variety of mechanisms at a variety of levels as suggested by the titles of the projects indicated above and have resulted in improved capacities, skills, exchange of expertise, information sharing, enhancing implementation of the convention, etc. Hence, the active participation of Lebanon in the operations of the Convention addresses:

- All Goals of the Strategic Plan.
- The 2010 Target

The main constraint is the limited funding for developing country delegations to actively participate in Convention processes as only one-person per delegation is nominated at major negotiating meetings.

F. COMMENTS ON THE FORMAT

Box LXXV.

Please provide below recommendations on how to improve this reporting format.

- The addition of a new part (Part B) to the format of the Third National Report (TNR) will provide the CBD Secretariat with necessary indications about the efforts of the parties towards the 2010 goals and the progress of work in the implementation of the GSPC, however this requires more effort and time for the preparation of the report than the format of the Second National Report (SNR) and lead as well to many repeated information in different parts of a section and in the different sections and to the increase of the size of the report.
- Part C and D are very important as a summarized overview of implementation of the Convention.
- We feel that the report is still containing open-ended questions tolerating as such a more or less wide range of interpretation for the information requested.
- Some questions require same information inducing as such duplication of information in many sections of the report

- It was noticed that during the workshop which gathered several stakeholders, the latter hesitated -in some cases- while deciding on which box of the report format should be checked.
- Also during the workshop and while projecting the questions on the screen, it appeared that many questions were difficult to understand by the participants due to their ambiguity (lawful language) and length. The same problem appeared during the interviews when answers by different people showed that the same question was understood differently. We suggest using very simple and short questions to allow people understanding their aims.
- The repeated information given under "measures taken" and "actions taken" as reply to some questions under 2010 Target, GSPC, Articles and Thematic areas make the reader getting confused about which part of the report he is reading.
- The team finds more appropriate to provide at the beginning of the report a list giving full details of the projects mentioned in various sections of the report, as reference for the reader (e.g. funding agency, implementing agency, executing agency, duration of project and objectives). This will reduce the size of the document, and avoid repetition of information and will lead to a better analysis of the texts and will allow interested readers to track the progress in implementing the convention.
- Some blank boxes could not be checked with an X due to an unknown problem. Accordingly, the "x" was inserted in the corresponding question box. We hope this matter will not affect the computerized analysis.