

Earth Link & Advanced Resources Development  
Selected References  
Environmental Management - Development Projects





## Client

Expo 2020 Dubai / Ch2mmace

## Location

## Date

Dubai, UAE

Dec. '15 - Sep. '20

## Project Description

Dubai EXPO 2020 is one of the most prestigious developments in the world currently being implemented. It includes exhibition areas and entertainment to showcase the culture of most nations in the world. The development is supported by comprehensive infrastructure (including public transport), waste management and other services to make the development completely self-sufficient. The development is geared by a strong emphasis on sustainability.

ELARD had prepared the EIA study for EXPO and has been appointed the Environmental Consultant to implement the EMP requirements of this ambitious project. This assignment confirms the reputation and capability of ELARD to act as a truly international environmental consultant for complex and capital intensive projects. Upon the first 6 months of project implementation, ELARD received an appreciation letter from EXPO 2020; leadership expressing its satisfaction of the level of quality of ELARD's work

## Scope of Work

- Preparation of CEMP and Construction Waste Management Plan for the development
- Updating CEMP and CWMP every 6 months as more contractors are hired and new information is obtained
- Supervising implementation of CEMP and CWMP through the project duration
- Preparation of quarterly environmental reports including air quality, noise, water quality, wastewater, solid waste, hazardous wastes, and handling of dangerous goods

## SEA of The Capital Surface Transport Master Plan – Abu Dhabi



## Client

Arup

## Location

Abu Dhabi, UAE

## Date

Oct. '15 - Nov. '16

## Project Description

Consultancy Services for conducting a Strategic Environmental Assessment (SEA) of the Capital Surface Transport Master Plan; a project by the Abu Dhabi Department of Transport (DoT) intended to be an update of the 2009 Abu Dhabi Surface Transport Master Plan (ADSTMP) reflecting the long term transport strategy needed to support the new Plan Capital 2030 Update prepared by the Abu Dhabi Urban Planning Council (UPC) in 2014.

The project aims at identifying the environmental impacts arising from the CAPSTMP compared to the current environmental baseline in the project area, identifying the preferred alternative from an environmental perspective, and development of an environmental management strategy to mitigate the identified adverse impacts.

## Scope of Work

The project is divided onto the following stages:

- Preparation of terms of references
- Analysis of legal, policy, and administrative frameworks
- Analysis of baseline conditions
- Development of the SEA framework of objectives, targets, and indicators
- Analysis of alternatives and identification of the preferred alternative
- Impacts assessment
- Development of environmental management strategy
- Compilation of the SEA Report





## Client

Ministry of Environment (MoE)

## Location

Lebanon

## Date

Dec.'14 - Jan.'16

## Project Description

Lebanon, as a signatory country, has undertaken the necessary steps to fulfil its commitments towards the CBD by developing and publishing its NBSAP in 1998 followed by an amendment in 2005. The first NR was published in 1998 and then the second, third, and fourth NRs followed in 2002, 2005 and 2009 respectively. In addition, Lebanon's Clearing-House Mechanism (CHM) for Biodiversity website was launched in 2005; the website is a CHM tool providing a resource center and platform for exchange of information on biological diversity in Lebanon.

Lebanon currently needs to abide by COP-10 outcomes by updating its NBSAP and preparing the 5th National Report.

The project is funded by the Global Environment Facility (GEF), implemented by the United Nations Environment Program (UNEP), and executed by the Lebanese Ministry of Environment (MoE).

## Scope of Work

- Updating the National Biodiversity Strategy and Action Plan (NBSAP)
  - Biodiversity stocktaking and assessment
  - Vision, long-term goals/priority areas, national targets
  - Action Plan - actions to achieve the strategy, application of NBSAP to sub-national entities, mainstreaming into development, poverty reduction and climate change
  - Implementation Plan – capacity development, needs assessment, communication & outreach, resource mobilization
- Preparing the fifth National Report (5th NR) to the Convention of Biological Diversity (CBD)
  - Part I: An update on biodiversity status, trends, and threats and implications for human well-being
  - Part II: The national biodiversity strategy and action plan (NBSAP), its implementation, and the mainstreaming of biodiversity
  - Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals
- Upgrading the existing Clearing House Mechanism (CHM)
- Organization of five multi-stakeholder workshops to engage stakeholders who might support or undermine progress towards desired outcomes is a crucial element of the project. Hence, the first step in this task is to identify multiple stakeholders, including government, NGOs, civil society and the private sector.



ENVIRONMENTAL IMPACT ASSESSMENT FOR THE DETAILED  
MASTER PLAN OF JUMEIRAH CENTRAL

## Client

Arup

## Location

Abu Dhabi, UAE

## Date

Apr. '16 - Oct. '16

## Project Description

Sufouh Development (the "Project Proponent") has commissioned Arup (the "Detailed Master Plan Consultant") to develop the detailed master plan for the Jumeirah Central mixed-use, transit oriented development in Al Sufouh First area where Dubai Police Academy is currently located. Arup commissioned ELARD (the "EIA Consultant") to conduct an Environmental Impact Assessment study in line with DM-EPSS Technical Guidelines No. 2 on "EIA Requirements for Land Development, Infrastructure, and Utility Projects" (March 2014).

The scope of work included an identification of the environmental aspects and features that will be assessed, and the spatial and temporal boundaries of assessment. The identification is based on the design features of the project and the current site conditions.

The work was carried by an ELARD Team of environmental specialists in collaboration with DM-approved consultants for the air quality and noise monitoring, soil and groundwater sampling, and ecological surveying and impact assessment.

The study involved field visits to the project site to study the existing conditions, identify the presence of sensitive receptors, conduct field examinations, and confirm presence of any environmental sensitivity, and collect primary baseline data with respect to habitats and terrestrial species, ambient air quality, sound levels, soil and groundwater quality.

The various activities of the project were identified and accordingly the possible interactions of these activities with the surrounding environment were described; significance of the impacts were assessed and mitigation and monitoring mea-



## Scope of Work

- Development of a Scoping Report
- Planning and overseeing the collection of baseline data on the quality of the environment, including air quality, noise, ecological components, soil and groundwater quality
- Development of the project description through revision and collation of the project design data
- Elaboration of the impacts, their assessment and identification of the mitigation and enhancement measures, and monitoring of the environmental indicators
- Preparation of the Environmental Management and Monitoring Plan

## ENVIRONMENTAL REVIEW REQUIREMENTS FOR WATER INFRASTRUCTURE SUPPORT AND ENHANCEMENT FOR LEBANON (WISE – LEBANON)



### Client

Chemonics Lebanon s.a.r.l - USAID Contractor

### Location

Lebanon

### Date

May. '13 – Dec. '15

### Project Description

In response to many challenges facing the water sector in Lebanon, USAID/Lebanon has initiated the project titled Water Infrastructure Support and Enhancement for Lebanon (WISE-Lebanon). The purpose of the project is to enhance Lebanon's capacity in the management of water resources through water and wastewater infrastructure upgrades and related management support. The WISE-Lebanon Project provides engineering, procurement, construction, supervision, and capacity building services. Chemonics International through Chemonics Lebanon S.A.R.L. [Chemonics] is implementing the project under the following three components: project identification and design, project implementation, and capacity building on implemented capital investment.

ELARD was appointed by Chemonics to support the achievements of the WISE project and in particular to work across the three project components to manage all environmental aspects of project selection, preparation, and relevant construction oversight of water and wastewater infrastructure upgrades. The activities conducted under WISE-project included the following:

- Bekaa: construction of Haouch el Oumara Water Supply Network, rehabilitation of the elevated Reservoir in Ablah, construction of the Terbol Water Reservoir.
- North Lebanon: construction of Deddeh Water Supply Network, refurbishment of the Ayoun Es Samak Spring Catchment Area.
- South Lebanon: rehabilitation of Chehabiyeh and Ebel Es Saki Pump Stations.
- Kesserouan: installation of water meters in Ajaltoun, Rayfoun and Qleiaat.
- Other activities: provision of two fuel tanker trucks to the Beirut/ Mount Lebanon Water Establishment (BMLWE), training of water establishment.

### Scope of Work

- Preparation of an Environmental Manual.
- Projects' Environmental Assessment according to USAID's Procedures: Preparation of ERAC and EMMP reports for the activities cited above.
- Projects' Environmental Assessment according to Lebanese Requirements: preparation of screening forms and initial environmental examination (IEE) reports submitted to the Lebanese Ministry of Environment.
- Training of contractors on Environmental Mitigation and Monitoring (EMMP) requirements.
- Supervision of EMMP Implementation at Haouch el Oumara, Deddeh, Kesserouan and Chehabiyeh.
- Environmental Training for North Lebanon, Bekaa and South Lebanon Water Establishments on operation and maintenance of wastewater treatment plants, integrated water resources management, and management of groundwater resources. The training sessions included site visits to wastewater treatment plants.
- Water Sampling and Flow Measurement.
- Support for Bekaa water establishment in tender documents for wastewater project.





## ASSESSMENT OF ENERGY CONSUMPTION AND MITIGATION INITIATIVES IN THE COMMERCIAL AND INSTITUTIONAL SECTORS IN LEBANON



### Client

United Nations Development Programme (UNDP)

### Location

Lebanon

### Date

Jul. '14 – May. '15

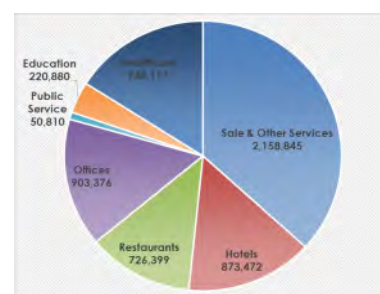
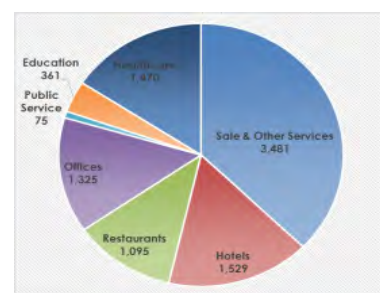
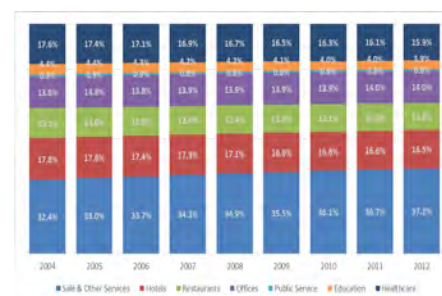
### Project Description

The United Nations Development Program is providing assistance to the Ministry of Environment through its Climate Change Coordination Unit with the enabling activities necessary to undertake the First Biennial Update Reporting (BUR) to the UNFCCC and its submission to the Conference of the Parties (COP) in accordance with the applicable guidance. The BUR will include a) updated National Circumstances, b) GHG National Inventories, c) Information on mitigation actions and domestic MRV, d) constraints and gaps, and related financial, technical and capacity building needs including description of support needed and received, and e) information on level of support received to enable the preparation and submission of the biennial update report.

This consultancy aims at providing services for the assessment of energy consumption and mitigation initiatives in the commercial and institutional sectors. This information will enable the calculation of greenhouse gas emissions from both sectors that will be reported in Lebanon's next inventory submission to the UNFCCC.

### Scope of Work

- Assessment of energy consumption from the commercial and institutional sectors in Lebanon for the period 2005 – 2012 and identification and characterization of all private mitigation initiatives undertaken to reduce emissions, through a nation-wide survey based on a statistically representative sample;
- Analysis of the survey results, trend assessment and extrapolation of the sample data to characterize energy consumption on a national scale; and
- Recommendations for an appropriate and tailored "Measurement, Reporting and Verification" (MRV) system to institutionalize both sectors' reporting to the Ministry of Environment, including a plan for QA/QC and uncertainty assessment.





## Client

The World Bank (WB)/ The Council for Development and Reconstruction (CDR)

## Location

Lebanon

## Date

Mar. '14 - May. '15

## Project Description

ELARD was retained by the World Bank (WB) and the Ministry of Environment (MoE) to conduct Environmental and Social Impact Assessment (ESIA) studies related to the collection and treatment of wastewater in the districts of Zahle and West Bekaa. The studies were conducted in a highly participatory manner, whereby several multi-stakeholder forums were organized to discuss and validate the results. All key stakeholders, and project Affected Persons (PAPs) were involved. These included the Ministries of Interior and Municipalities, Environment, Agriculture, Energy and Water, Public Works and Transport, Health, as well as the Litani River Authority, Bekaa Water Establishment, and representatives of local NGOs.



## Scope of Work

- Preparation of Environmental and Social Management Framework (ESMF) using WB guidelines
- Preparation of Resettlement Policy Framework (RPF)
- Conducting retroactive assessment of four (4) existing wastewater treatment plants
- Preparation of Environmental Management Plan (EMP)
- Preparation of a Resettlement Action Plan (RAP)
- Environmental and social baseline field surveys, interviews and other data collection methods
- Organization and implementation of major participatory workshops





## Client

Arup

## Location

Dubai, UAE

## Date

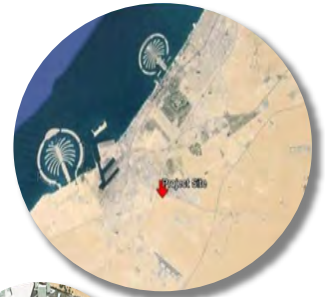
Jul. '14 - Nov. '14

## Project Description

In November 2013, the United Arab Emirates won the right to host the World Expo 2020 in Dubai in 2020. Since the first Great Fair of 1851, World Expos have continued to be one of the largest and most enduring global mega-events. Expo will last six months and attract millions of visitors who explore and discover pavilions, exhibits and cultural events staged by hundreds of participants including nations, international organizations and businesses. Dubai World Trade Centre (DWTC) was responsible for preparing a detailed master plan for the Dubai Expo 2020 with the support of ARUP and HOK as the Master Planning Consultants. ELARD was appointed by ARUP to prepare the Environmental Impact Assessment (EIA) for the Dubai Expo 2020 detailed Master Plan.

## Scope of Work

- Legal and Institutional Framework;
- Environmental and Social Baseline;
- Environmental and Social Impacts Assessment;
- Environmental and Social Management Plan (ESMP) including mitigation, monitoring, and institutional strengthening-capacity building and training;
- Analysis of Alternatives



STRATEGIC ENVIRONMENTAL ASSESSMENT OF LEBANON'S  
RENEWABLE ENERGY SECTOR PROJECT

## Client

United Nations Development Programme (UNDP)

## Location

Lebanon

## Date

Nov.'13 - Dec. '14

## Project Description

The United Nations Development Programme has solicited ELARD for the preparation of a SEA for Lebanon's Renewable Energy Sector Project.

The Lebanese Ministry of Energy and Water (MoEW) has issued a policy paper setting a national framework for the energy sector in Lebanon. The policy paper commits to achieve a 12% Renewable energy target in the overall energy supply mix.

UNDP is supporting the Government of Lebanon to prepare a Strategic Environmental Assessment (SEA) study, in conformity with the SEA Decree 8213 published in the Official Gazette in 2012, to support the development of the Renewable Energy Sector (RES), and ensuring that the environmental and socio-economic implications of the strategy are taken into consideration at the early stages of decision-making.



## Scope of Work

- Assessment of the baseline conditions from a technical and environmental and social point of view;
- Analysis of the legal, institutional, and financial frameworks governing the renewable energy sector in Lebanon;
- Development of the SEA framework of objectives, indicators and targets;
- Identification of alternatives and their analysis against 1) the developed framework and 2) costs and benefits criteria in order to identify the most suitable alternative;
- Impacts assessment identifying potential environmental, social and economic positive and negative impacts arising from the deployment of the most suitable alternative;
- Development of an environmental management framework to mitigate and/or alleviate negative impacts;
- Development of recommendations covering: 1) the integration of the SEA findings into the Renewable Energy Strategy, 2) mainstreaming the SEA findings into national policies and plans, 3) EIA requirements, and 4) Legal, institutional, and financial measures; and
- Organization of two multi-stakeholder workshops to engage stakeholders in the process and ensure their involvement in the decision making process.

## ENVIRONMENTAL, SOCIAL AND TRAFFIC IMPACT ASSESSMENT FOR THE FOUAD BOUTROS AVENUE



### Client

Council for Development and Reconstruction (CDR)

### Location

### Date

Lebanon

Jan. '14 - ongoing

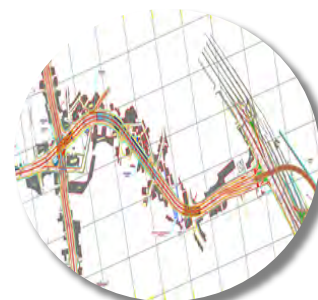
### Project Description

Earth Link and Advanced Resources Development s.a.l. (ELARD) in association with Transport & Mobility Solutions, s.a.r.l. (TMS) has entered into an agreement with the Council for Development and Reconstruction (CDR) to prepare an Environmental and Social Impact Assessment (ESIA) supported by a Traffic Impact Assessment (TIA) for the construction and operation of Fouad Boutros Avenue (FBA) project. The planned project links Alfred Naccache road (in Mar Mitr – Achrafieh District), which runs in front of Spinneys Achrafieh, from Mar Dimitrios at one extremity to the Charles Helou expressway (in Medawar District) near the Port of Beirut at the other extremity. The Avenue stretches through the urban districts of Achrafieh, Rmeil and Medawar and runs above ground except for the tunnel portions.

The Project passes through a residential and busy area and involves demolition of residential structures and displacement of a number of residents. It is to be noted that the majority of the homes slated for demolition have been abandoned and already expropriated by the Government in the 1970s. Potential impacts assessed are those relating to traffic, air quality, noise, archeology and cultural heritage, socio-economy, landscape and visual amenity, geology and hydrogeology, and human health and safety. The project involves two public consultation meetings and an analysis of alternatives to the Project.

### Scope of Work

- Preparation of scoping report;
- Analysis of the legal and institutional framework;
- Assessment of the environmental, social, and economic baseline conditions; including site investigations (traffic counts, noise measurements, and ecological assessments) and socio-economic/cultural heritage/visual impacts questionnaires;
- Modeling (traffic, noise, air quality);
- Stakeholder consultations including the organization of public participation sessions, workshops and focus groups;
- Analysis of alternatives;
- Impacts assessment to identify any positive or negative environmental and social impacts on traffic, air quality, noise, archeology and cultural heritage, socio-economy, landscape and visual amenity, geology and hydrogeology, and human health and safety;
- Development of the Environmental and Social Management Plan (ESMP); listing mitigation and management measures and monitoring activities for the different phases of the Project to avoid, reduce, mitigate or compensate for adverse social impacts.



## PROVISION OF ENVIRONMENTAL ANALYSIS AND CONSULTATION SERVICES ON ENVIRONMENTAL STUDIES



### Client

United Nations Interim Force in Lebanon (UNIFIL)

### Location

### Date

Lebanon

Oct. '13 - Oct. '15

### Project Description

ELARD was retained by UNIFIL to test and analyzing various materials samples and to provide consultation in the form of specialized environmental studies in the UNIFIL's Headquarters and Areas of Operations (AoO) in South Lebanon. The findings from each sampling and analysis episode was presented in the form of a written report that included recommendations on the treatment and/or disposal of the polluting substance[s]. The scope of the Environmental Studies included sampling from different media, analysis of collected samples, reporting of results and compilation of an integrated report that provides a clear and concise description of the identified issues, their root causes, the procedures for assessment and sampling, results of the samples' analysis and remedial recommendations to restore environmental conditions to the background status.

### Scope of Work

- Collection of samples to determine the contaminating substances, concentration of these contaminants, and depth of contaminated medium [in case of soil contamination].
- Preparation of Integrated Environmental Assessment (IEA) studies
- Development of Environmental Typical Settings document for the UNIFIL positions and activities
- Evaluation of the wastewater treatment plants conditions and provision of recommendations to improve the treatment process



## ELABORATION OF A STRATEGIC SUSTAINABLE REGIONAL DEVELOPMENT PLAN (SSRDP) FOR AKKAR AND THE RELATED STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)



### Client

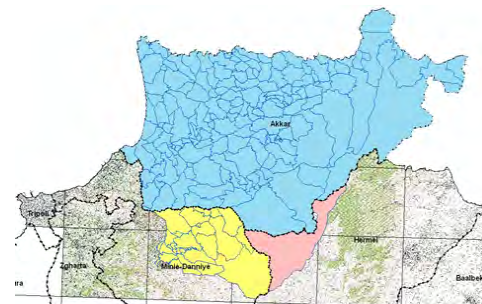
GFA Consulting/ Council for Development and Reconstruction (CDR)

### Location

### Date

Akkar, Upper Hermel and Upper Donniyeh

Dec. '12 - Jun. '14



### Project Description

The purpose of this project, which falls within the framework of the ADELNORD Project, is the elaboration of a Strategic Sustainable Regional Development Plan (SSRDP) for Akkar, including the areas of Upper Hermel and Upper Dennieh that are relevant to the national park to be created as per the National Physical Master Plan for the Lebanese Territory (NPMPLT). The SSRDP aims to build up a long term « territorial vision » associated with identified priority sectors. It shall allow the design of the programs and projects for their implementation.

The SSRDP proposes an economic, social and environmental development project which fits into the sustainable development principles and into the national policy of the regional development as it is expressed in the NPMPLT.

The SSRDP will be supported by the largest possible number of local stakeholders, especially those who have the power to decide, finance or influence the choices in the region, but also by those who will ultimately benefit from the outcomes of the proposed plan.

The preparation of the SSRDP adopts a process-oriented approach that brings stakeholders together to discuss the stakes related to the development of their region, how to integrate them in local development, and to improve local governance.

A Strategic Environmental Assessment (SEA) is developed in parallel to the SSRDP to allow the identification of key environmental issues and concerns requiring attention, as well as those that can be built upon and provide potential assets for the Plan. The SEA analyzes the alternatives of the SSRDP, assesses potential impacts and proposes an environmental management plan with relevant institutional strengthening and training.

### Scope of Work

#### Component I: SSRDP

- Data collection
- Development of base map of the territory
- Preparation of inception report
- Preparation of a diagnosis report
- Preparation of Objectives, Vision and Priority Sectors report
- Preparation of Alternatives Note
- Preparation of the SSRDP document.

#### Component II: SEA

- Review of legal and institutional framework
- Development of the Initial State of the Environment (Baseline)
- Preparation of SEA scoping report
- Analysis of Alternatives of the SSRDP and impact assessment
- Elaboration of an Environmental Management Plan (EMP)
- Compilation of the SEA report



## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT OF THE MINIEH-DANNIEH CAZA WASTEWATER FEASIBILITY STUDY



### Client

Council for Development and Reconstruction (CDR)

### Location

Lebanon

### Date

Apr. '14 – Jun. '15

### Project Description

Similarly to most rural areas in Lebanon, the Minieh-Dannieh Caza lacks a proper wastewater management system. There are neither wastewater treatment stations nor adequate networks to collect and channel wastewater in the area. Villages that have a wastewater network are either not connected to a treatment station; have primitive canalizations; have badly engineered networks leading to contamination of the potable water network; have an old network that needs maintenance; or/and have incomplete networks.

Thus, the project consists of a feasibility study for the planned Minieh-Dannieh Caza Wastewater Project with the objective of defining its main components including:

1. The appropriate number and approximate locations of wastewater treatment plants (WWTPs) to serve the Caza;
2. The preliminary WWTPs sizes and treatment techniques, and
3. The main sewer trunk lines and conveyors.

The overall assessment of the Minieh–Dannieh wastewater system identified 10 systems which include one medium size WWTP and 6 small scale readymade WWTPs.

The scope of works includes the Environmental and Social Impact Assessment (ESIA) study for the feasibility study.



### Scope of Work

- Analysis of the legal and institutional framework;
- Assessment of the environmental, social, and economic baseline conditions; including site investigations (ecological assessment and water quality analysis – surface and groundwater) and socio-economic questionnaires;
- Stakeholder consultations (municipalities, mayors, and local government authorities)
- Analysis of alternatives comparing the impacts of developing the project versus the current baseline and assessing alternative techniques for wastewater treatment;
- Impacts assessment to identify any positive or negative environmental and social impacts;
- Development of the Environmental and Social Management Plan (ESMP); listing mitigation and management measures and monitoring activities for the different phases of the Project to avoid, reduce, mitigate or compensate for adverse social impacts;
- Provision of guidance to be considered in the detailed design study and choice of treatment stations locations to minimize impacts on the environment and the society. Namely in terms of biodiversity, groundwater vulnerability, geological formations, and seismicity.



## ENVIRONMENTAL REVIEW REQUIREMENTS OF THE WATER INFRA-STRUCTURE SUPPORT AND ENHANCEMENT (WISE) PROJECT-LEBANON



### Client

Chemonics Lebanon s.a.r.l.

### Location

### Date

Haouch El Oumara, Chehabiyeh,  
Deddeh and Kesserouan –Lebanon

Jun. '13 – Sep. '15

### Project Description

Chemonics International through Chemonics Lebanon s.a.r.l. (Chemonics) is implementing the WISE Lebanon Project. The purpose of the project is to enhance Lebanon's capacity in the management of water resources through water and wastewater infrastructure upgrades and related management support. The WISE Lebanon project provides engineering, procurement, construction, supervision and capacity building services for the purpose of enhancement of the water and wastewater infrastructure conditions and management in Lebanon. Chemonics is implementing the project under the following three components: project identification and design, project implementation and capacity building on implemented capital investment.

Chemonics has entered into a fixed-price sub-contract with ELARD who will support the project identification and design task, through furnishing the environmental assessment studies for the envisaged infrastructure projects.

As part of the project identification component of WISE Lebanon, Chemonics has identified four (4) priority projects. These are:

1. Project 1: Construction of a potable water network at Haouch el Oumara in Zahleh (about 35 km of piping);
2. Project 2: Construction of a potable water network in Deddeh, El Koura (about 40 km of piping); and
3. Project 3: Rehabilitation of the potable water pumping station in Chehabieh in the south of Lebanon (booster station).
4. Project 4: Kesserouan Water Meter Installation in Qleiate, Ajaltoun and Reyfoun.

### Scope of Work

- Preparation of an Environmental Manual which serves as a roadmap for project environmental compliance.
- Field visits to project sites and meeting with municipalities
- Environmental Assessment according to Lebanese requirements.
  - Preparation of screening forms to MoE.
  - Preparation of Initial Environmental Examination reports for Haouch El Oumara Water Supply Network activity and Deddeh Water Supply Network activity.
- Projects' Environmental Assessment according to USAID's procedures. Preparation of Environmental Review and Assessment Checklist and Environmental Mitigation and Monitoring Plan (ERAC-EMMP) reports for the four project activities.
- Preparation of the Final Report on Overall Findings.
- Water quality assessment (groundwater sampling and analysis)
- Training of contractors on EMMP implementation
  - Preparation of materials for training of Contractors on EMMP implementation.
  - Delivery of four training sessions to contractors.
- EMMP implementation monitoring and reporting
- Training needs assessment for the four water establishments
  - Preparation and delivery of training needs assessment workshops with each establishment (4 sessions).
  - Preparation of environmental training program for the four Water and Wastewater Establishments.





## Client

Council for Development and Reconstruction  
(CDR)

## Location

## Date

Abdeh – Akkar, North Lebanon

Oct. '10 - Jun. '14

## Project Description

The project's intervention zone, located over a mountainous terrain in the Cazas of Akkar, Danniyeh and Hermel, North of the country, constitutes one of the poorest areas in Lebanon. The socio-economic situation is rooted not only in the area's scarce exploitable natural resources, but also stems from the very few public services and external cooperation programs allocated throughout the years. Economic progress indicators reveal that this region is far behind the rest of the country. Land management and soil and water resources' exploitation are also in a difficult situation. Agriculture remains underdeveloped and is often practiced with little care to the environment despite being considered as the second largest economic activity for families residing in most of the area's villages.

Forests are private or semi-private properties, as the concept of state ownership is inexistent. Although they are subject to the exploitation regulations set by the Forests Department (Ministry of Agriculture), patches of forests are disappearing as a result of cutting, coal exploitation, transformation into agricultural lands, or fires resulting from the lack of effective anti-fire measures attributable to the private property settings.

The sub-prefecture of Akkar holds one of the rare biodiversity spots in the region, which attracts hunters in the autumn and winter seasons. An area of 200 Km<sup>2</sup> of natural forests actually lies between Fnaydek to the South-East and Qobayat to the North East, South of the town of Qobayat.

Arrangements have been taking place over the last few years to declare the zone of the Upper Akkar and the Upper Dannieh as a national park so as to better protect this natural heritage.

The general objective of the project is threefold and aims at:

- Contributing to national unity and to improving life conditions for the Lebanese population through the valorization of the region's underdeveloped potentialities;
- Contributing to a national land use planning policy; and
- Contributing to the improvement of environmental protection.

The specific objective of the program highlights the participative interaction with local communities in the sustainable management of agricultural and natural resources and the protection of the environment.

## Scope of Work

- An effective support to project management, which is participatory and results-oriented, through:
  - a) Support to operational management and administrative activities;
  - b) Building the capacities of local actors in project management.
- The identification, preparation and implementation of projects in the fields of agricultural development and sustainable natural resources management, ensuring a participatory approach and sustainability mechanisms;
- An effective support to the EFSD (Economic and Social Fund for Development) team in the identification, preparation, implementation and monitoring of local development projects in collaboration with Municipalities;
- An effective support to the CDR team in the initiation of a regional and local masterplan in collaboration with the main stakeholders; and
- The implementation of a high-performance system for the monitoring, evaluation and communication relative to the project.

## ELABORATION OF A STRATEGIC SUSTAINABLE REGIONAL DEVELOPMENT PLAN (SSRDP) FOR AKKAR AND THE RELATED STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)



### Client

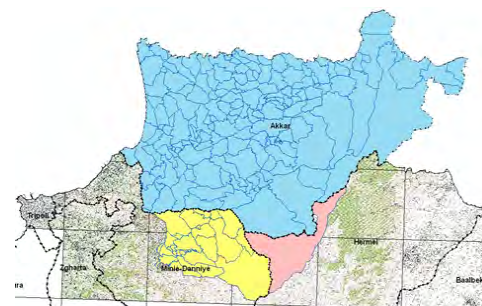
GFA Consulting/ Council for Development and Reconstruction (CDR)

### Location

### Date

Akkar, Upper Hermel and Upper Donniyeh

Dec. '12 - Jun. '14



### Project Description

The purpose of this project, which falls within the framework of the ADELNORD Project, is the elaboration of a Strategic Sustainable Regional Development Plan (SSRDP) for Akkar, including the areas of Upper Hermel and Upper Dennieh that are relevant to the national park to be created as per the National Physical Master Plan for the Lebanese Territory (NPMPLT). The SSRDP aims to build up a long term « territorial vision » associated with identified priority sectors. It shall allow the design of the programs and projects for their implementation.

The SSRDP proposes an economic, social and environmental development project which fits into the sustainable development principles and into the national policy of the regional development as it is expressed in the NPMPLT.

The SSRDP will be supported by the largest possible number of local stakeholders, especially those who have the power to decide, finance or influence the choices in the region, but also by those who will ultimately benefit from the outcomes of the proposed plan.

The preparation of the SSRDP adopts a process-oriented approach that brings stakeholders together to discuss the stakes related to the development of their region, how to integrate them in local development, and to improve local governance.

A Strategic Environmental Assessment (SEA) is developed in parallel to the SSRDP to allow the identification of key environmental issues and concerns requiring attention, as well as those that can be built upon and provide potential assets for the Plan. The SEA analyzes the alternatives of the SSRDP, assesses potential impacts and proposes an environmental management plan with relevant institutional strengthening and training.

### Scope of Work

#### Component I: SSRDP

- Data collection
- Development of base map of the territory
- Preparation of inception report
- Preparation of a diagnosis report
- Preparation of Objectives, Vision and Priority Sectors report
- Preparation of Alternatives Note
- Preparation of the SSRDP document.

#### Component II: SEA

- Review of legal and institutional framework
- Development of the Initial State of the Environment (Baseline)
- Preparation of SEA scoping report
- Analysis of Alternatives of the SSRDP and impact assessment
- Elaboration of an Environmental Management Plan (EMP)
- Compilation of the SEA report

STRATEGIC ENVIRONMENTAL ASSESSMENT OF LEBANON'S  
RENEWABLE ENERGY SECTOR PROJECT

## Client

United Nations Development Programme (UNDP)

## Location

## Date

Lebanon

Nov.'13 - 18 Oct'17

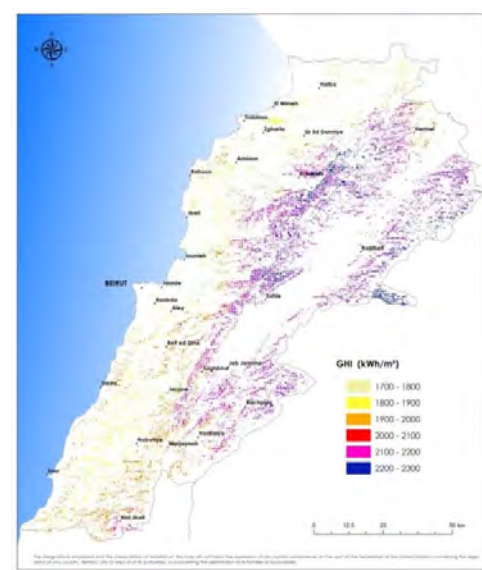


## Project Description

The United Nations Development Programme has solicited ELARD for the preparation of a SEA for Lebanon's Renewable Energy Sector Project.

The Lebanese Ministry of Energy and Water (MoEW) has issued a policy paper setting a national framework for the energy sector in Lebanon. The policy paper commits to achieve a 12% Renewable energy target in the overall energy supply mix.

UNDP is supporting the Government of Lebanon to prepare a Strategic Environmental Assessment (SEA) study, in conformity with the SEA Decree 8213 published in the Official Gazette in 2012, to support the development of the Renewable Energy Sector (RES), and ensuring that the environmental and socio-economic implications of the strategy are taken into consideration at the early stages of decision-making.



## Scope of Work

- Analysis of Data Gaps and Design of Baseline Surveys
- Stakeholder management plan
- Legal and institutional analysis including:
  - Development of scenarios
  - Compatibility analysis with other legislation, policies, plans and programmes
  - Identification of key issues of concern
  - Preparation of SEA framework of objectives, indicators and targets
  - Identification of alternatives
  - Public consultation
- Analysis of alternatives
- Preparation of Environmental, social and economic impact assessment
- Development of Environmental and social management strategy

## ENVIRONMENTAL IMPACT ASSESSMENT FOR MASTER PLAN FOR ABU DHABI INTERNATIONAL AIRPORT FREE ZONE



### Client

Master Planner: Project Management and Design Consultants (PMDC) /  
Abu Dhabi Airports Company (ADAC)

### Location

Abu Dhabi, UAE

### Date

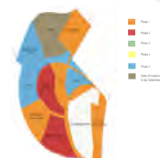
Sep. '13 - Jul. '14

### Project Description

Abu Dhabi Airports Company (ADAC) is currently preparing a detailed master plan for the Abu Dhabi International Airport Free Zone (ADIAFZ) with the support of Project Management and Design Consultants S.A.L. (PMDC) Abu Dhabi as the Master Planning Consultants. Detailed master plans are developed for the following areas:

- The Al Falah Free Trade Zone
- Airside logistics area
- Logistics park
- South Side Phase 2
- Airport city

Earth Link & Advanced Resources Development (ELARD) has been commissioned by PMDC to provide environmental permitting services for the ADIAFZ and Airport City detailed Master Plan. EAD requested conducting an Environmental Impact Assessment (EIA) for this project as part of the EIA for the second phase of the Abu Dhabi International Airport (ADIA) expansion.



### Scope of Work

- Environmental Permit Application (EPA)
- Preparation of Terms of Reference (TORs) for EIA Study
- Preparation of EIA Study including:
  - Determination of Study Area
  - Project description
  - Baseline survey (air quality, noise, ecology, soil and groundwater...)
  - Impact assessment, mitigation and monitoring
  - Project alternatives





## Client

GTZ / CDR

## Location

Lebanon

## Date

Jul. '07 - Jun. '12



## Project Description

The Environmental Fund for Lebanon project was launched by the Government of Germany (executed through the Deutsche Gesellschaft für Technische Zusammenarbeit GTZ) as a response to the environmental and economic damages of the war in Lebanon in 2006. An Environmental Fund of 2.5 mio € is made available to fund local environmental interventions. The Council for Development and Reconstruction (CDR) is the executing agency and is responsible for coordinating implementation of the project in close cooperation with the Ministry of Environment (MoE). Technical assistance (GFA Consulting Group and ELARD) to the project was deployed since July 2007 for the duration of three years. The TA has been instrumental to mobilize a project steering committee and its mandates, prepare a full guidelines for applicants with a project intervention strategy, preparation of application forms and guidelines, and proposal evaluation criteria. TA provided support to project applicants during the preparation of proposals, reviewed proposals and selected 18 winning projects out of 88 submitted proposals, which included projects in the fields of waste management, cleaner production, reforestation and sustainable agriculture. The TA supports also contracts preparation and backstopping during projects implementation.

Last but not least, a capacity needs assessment was conducted with respect to environmental management leading to the development of a comprehensive training programme consisting of 5 modules in the fields of EIA, implementation of EMPs, strengthening environmental compliance at SMEs, cleaner production and forest fire management.

Given the success of the project, the German government has decided to add another 2.5 million EUROS to the fund to support more environmental projects in Lebanon. Ultimately, the fund shall be institutionalized in the country through the establishment of the National Environmental Fund stipulated by the Framework Law for the Protection of the Environment.

## Scope of Work

- Identification of key stakeholders to be part of project steering committee, preparation of mandates for the committee, and providing secretarial services to the committee
- Preparation of orientation strategy for the fund with key fields of intervention
- Preparation of a communication strategy for the fund
- Preparation of a full guidelines for applicants including application forms, evaluation criteria and process
- Support applicants in preparation of proposals including preparation of logframes, technical requirements and budget preparation
- Review of proposals and selection of winning projects
- Contracts preparation
- Applicants backstopping during project implementation
- Capacity needs assessment in environmental management and development of comprehensive training program
- Development of application decree for the institutionalization of the national environmental fund



## ENVIRONMENTAL IMPACT ASSESSMENT FOR DUBAI LAND COMMUNITY PROJECT, UAE



## Client

DMF Engineering, Dubai

## Location

Dubai

## Date

Jun. '08 – Oct. '08

## Project Description

DMF Engineering appointed ELARD to undertake an environmental impact assessment study for the Dubai Land Community project. The Dubai Land Community Project is located within Dubai Land area in Dubai, United Arab Emirates (UAE), neighboring the Mudon Project (south-west), Arabian Ranches (North), Health Farm River Side and other Villas (North-East). The total project area is about 200 ha. The development's proposed land use is predominantly residential/

commercial with 88 ha dedicated to apartments, commercial offices, villas, townhouses, home offices and attractions. Remaining area is dedicated to community facilities, open spaces and utilities, multi-level parking garages, and residual land. A key feature of the development project is the presence of a large aquarium with a planned capacity of 40 million liters as well as a lake at the water-front precinct.

In order to characterize the physical, biological socio economic baseline conditions, ELARD conducted extensive desk studies, field surveys, consultation meetings, satellite imagery processing, desk research, soil and ground water sampling, air quality and noise level monitoring. Sampling and measurement results were conducted in renowned international laboratory. Based on a detailed project activity description, the potential types of impacts were identified based on identified sensitive receptors location, contaminants migratory pathways and proximity to project development sites. Potential sources, impacts, and accidental hazards from construction, commissioning and post-commissioning activities were assessed. ELARD proposed mitigation measures to overcome all the negative impacts.

## Scope of Work

- Detailed environmental baseline description (Soil, Geology, Hydrogeology, Floral and faunal Biodiversity, Ambient Noise Level, Ambient Air Quality, Socio-Economy and Intersections with key Environmental Sensitivities) covering a Study Area
- Identify the potential impacts that might result from the construction and operation of Dubai Land Community project on the various receptors.
- Development of an environmental management plan to mitigate the impacts and set basis for future monitoring and adding to it a contingency plan for emergency cases.



## PREPARATION OF A BUSINESS PLAN FOR COMBATING POLLUTION OF THE QARAOUN LAKE, LEBANON



### Client

United Nations Development Programme (UNDP)

### Location

### Date

Bekaa, Lebanon

Jul. '10 – Jun. '11

### Project Description

The goal of the project “A Business Plan for Combating Pollution of the Qaraoun Lake” is to assist the Government of Lebanon and the Ministry of Environment in identifying the pollution sources of the Qaraoun Lake and recommending appropriate solutions in the form of a Business Plan.

The Project aims to define the investments needed for alleviating pollution pressures in the Upper Litani River catchment area and Qaraoun Lake. The Project comprised of desk and field data collection and analysis leading to the design and preparation of the Business Plan. Past reports and documents on surface water pollution sources and conditions in the Upper Litani River catchment area were thoroughly revised and the compiled data was complemented with extensive field surveys. The information on pollution sourced was laid out on GIS and shown on maps that were based on the sub-catchments of the Upper Litani River. Sampling of surface water quality was carried out to complement and confirm previous sampling efforts. Current and planned programmes and projects to tackle the different pollution sources were compiled and reviewed. Possible solutions for each pollution pressures in the different sub-catchments were identified and fleshed out. The proposed solutions were brought in line with current and planned measures, and take into account the institutional, legal and financial enabling environment. Responsible parties, cost, timeframe and potential funding sources for each of the proposed responses were clearly outlined.

### Scope of Work

- Information Review, Data Collection and Assessment consisting of: extensive field surveys for pollution sources, wells and springs; assessment or mapping in addition to water quality sampling and analysis.
- Development of an environmental database based on GIS platform.
- Drafting of a Business Plan
- Analytical diagnosis of pollution pressures
- Assessment of possible solutions or mitigation measures
- Examination of the Enabling Environment for the Preferred Response(s) per Pressure
- Consultation workshops



# ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE COMPLEMENTARY WORKS FOR SAFETY MEASURES ON THE MASNAA-SYRIAN BORDER ROAD



## Client

Council for Development and Reconstruction (CDR)

## Location

## Date

Lebanon

Oct. '11 – May '12

## Project Description

The Project consists of five (5) main components, each composed of several planned works and activities, summarized as follows:

- 1) General Security building improvements at the entrance and the departure sides;
- 2) Customs Administration building enhancement;
- 3) Additional infrastructure works required by Public Authorities;
- 4) The construction of a new truck parking at the northern side of the Masnaa Border Crossing to accommodate for 100 additional trucks, with the relevant access road, a fence, reinforced concrete retaining walls, a lighting network, public toilets, and a checking point room.
- 5) Widening of the existing southern truck parking to host additional 100 trucks, and supplying it with a fence, a storm-water drainage network, a lighting network, and public toilets.

## Scope of Work

- Legal and Institutional Framework;
- Environmental and Social Baseline;
- Public Participation and consultations meetings;
- Environmental and Social Impacts Assessment;
- Environmental and Social Management Plan (ESMP) including mitigation, monitoring, and institutional strengthening-capacity building and training;
- Analysis of Alternatives;
- Resettlement Action Plan (RAP) identifying potential impacts on economic activities and assets caused by the expropriation of land related to the project, and identifying regulatory procedures for compensation and appeals.



## PROVISION OF SERVICES TO CONDUCT DESK STUDIES AND FIELD ASSESSMENTS TO COMPLETE THE VULNERABILITY AND ADAPTATION (V&A) AND THE MITIGATION CHAPTERS OF LEBANON'S SECOND NATIONAL COMMUNICATION

Client	Location
United Nations Development Programme (UNDP), MoE	Lebanon
Executing Agent	Date
Ministry of Environment (MoE)	May '09 – Dec.'10

### Project Description

The government of Lebanon (GoL), represented by the Ministry of Environment (MoE), in cooperation with the United Nations Development Program (UNDP), is in charge of preparing its Second National Communication (SNC) to the United Nations Framework Convention on Climate Change (UNFCCC).

The SNC aims at updating the climate policy directions of

the country based on a rapidly changing environment, while better mainstreaming these policies into the government's political agenda. ELARD, in association with the Energy, Environment, and Water Research Center of Cyprus (responsible for climate modeling), has been retained by MoE/UNDP to work towards meeting three main objectives and one cross-cutting objective, in close cooperation with relevant stakeholders:

1. Identifying those systems in Lebanon, human and natural, which are most vulnerable to the impacts of climate change;
  2. Proposing adaptation measures to reduce the vulnerability of these systems and capitalize on their resilience;
  3. Proposing mitigation measures to reduce Lebanon's contribution to GHG emissions;
  4. Identifying those factors, external and internal, which could hinder the implementation of adaptation and mitigation strategies, so that these obstacles can also be addressed to improve the chances of implementation of these strategies.
- Vulnerability and adaptation studies have been conducted for agriculture, water, forestry, coastal zone, human settlements and infrastructure, tourism, human health and energy. Mitigation strategies for energy, industry, agriculture, transport, building envelopes, forestry, and waste management were also developed. The strategies were developed in a highly participatory manner. Two main participatory workshops were organized in which stakeholders from all sectors participated; in addition to numerous individual meetings held to ensure the strategies reflect the realities and needs of each sector.

### Scope of Work

- Scoping sectors and issues of concern with stakeholders
- Development of baseline scenarios for each sector in Lebanon in the 25-year future horizon to anticipate sector's development without climate change, based on existing government policies and probable trends
- Use Climate simulations for Lebanon in the horizons 2015-2044 and 2080-2099 to assess vulnerability and impacts from climate change on key sectors in Lebanon
- Vulnerability and impact assessment on agriculture, forestry, water, energy, coastal zone, human settlements and infrastructure, tourism, and human health.
- Development of adaptation strategies for these sectors to adapt to the projected impacts of climate change, with associated gaps and constraints
- Review of Green House Gas emissions inventory in Lebanon, and project GHG emissions in 25-years according to baseline scenarios
- Development of mitigation strategies per sector (energy, industry, agriculture, transport, building envelopes, forestry and waste management) to reduce Lebanon's contribution to GHG's emissions.
- Organize and facilitate multi-stakeholder participatory workshops to support the development of the SNC chapters and strategies.



## ALLEVIATING BARRIERS TO QUARRIES REHABILITATION IN LEBANON (ABQUAR)

### Client

Ministry of Environment

### Location

Lebanon

### Date

Jan. '06 – Jun. '07

### Project Description

Co-financed by the European Commission – Life Third Countries Program and the Lebanese Ministry of Environment (MoE), the Alleviating Barriers to Quarries Rehabilitation in Lebanon (ABQUAR) project is managed and executed by the latter (decree # 14685, dated 20/6/2005) with the external assistance of Earth Link and Advanced Resources Development (ELARD s.a.r.l.).

The overall objectives of the project are to minimize or eliminate the environmental and socio-economic impacts caused by non-rehabilitated quarries in Lebanon.

Specifically, the project aims at alleviating the legal, institutional, technical and financial barriers that hinder the process of quarries rehabilitation in Lebanon by first identifying the existing barriers and then developing measures to overcome them be they of legal and institutional, technical or financial nature.

### Scope of Work

- Evaluation and updating of current institutional and legal frameworks;
- Development of a GIS-based Decision Support System (DSS) as a tool for prioritization of quarries rehabilitation, proposals evaluation, and project monitoring;
- Development of a national plan for quarries rehabilitation;
- Development of financial mechanisms and economic incentives for quarry rehabilitation;
- Strengthening of institutional and human capacities through comprehensive training programs tailored to local needs;
- Increase of public awareness and participation;
- Communication and dissemination of the project outcomes and results.





## DEVELOPMENT OF A RESOURCE MOBILIZATION STRATEGY FOR THE IMPLEMENTATION OF THE NATIONAL ACTION PROGRAMME TO COMBAT DESERTIFICATION IN JORDAN



### Client

MOPIIC

### Location

Jordan

### Date

Jun. '07 – Feb. '08

### Project Description

The Global Mechanism was created to support the implementation of UN convention to combat desertification (UNCCD). It supports countries with seed money to develop financial strategies in order to mobilize resources for implementation of their national action programs.

CC and ELARD were hired by GM and MOPIIC to prepare a resource mobilization strategy to implement the National Action Programme to Combat Desertification in the country which was finalized in 2006, this in close coordination with the Ministry of Environment (MoE). The study comprises five main modules: (1) assessment of the national context; (2) analysis of existing financial flows in Lebanon, (3) analysis of multi-lateral and bi-lateral funding opportunities, (4) analysis of public budgeting and mainstreaming of NAP objectives into the process and (5) analysis of applicability of innovative financing mechanisms including environmental swaps, CDM and others. CC and ELARD experts have analyzed the internal budgeting system in Jordan and assessed means to optimize the mobilization and allocation of resources for the implementation of sustainable land management initiatives.

A detailed donor matrix was also prepared to support beneficiaries in the identification of the right source of funding for different sectors. Last but not least, the institutional, legal, policy, and technical barriers to resource mobilization were identified and steps to overcome these barriers proposed. A detailed action plan was developed as a road map to improve the capacity of Jordan and its private and public institutions in the mobilization and allocation of resources. Project implementation included close coordination with key stakeholders. ELARD is also implementing regional training workshops with GM on the development of integrated financial strategies.



### Scope of Work

- Analysis of national context including synergies and linkages among key international conventions
- Assessment of existing financial flows
- Analysis of multi-lateral and bi-lateral funding opportunities
- Analysis of public budgeting mechanism and entry points for NAP in the process
- Analysis of innovative financing mechanisms and their applicability to Jordan including CDM, environmental swaps, carbon sequestration and others.
- Organization of consultation meetings and a multi-stakeholder dissemination workshop
- Design and implementation of regional training workshops on development of integrated financial strategies



## DEVELOPMENT OF A RESOURCE MOBILIZATION STRATEGY FOR THE IMPLEMENTATION OF THE NATIONAL ACTION PROGRAMME TO COMBAT DESERTIFICATION IN LEBANON



### Client

UNDP - MoA - GM

### Location

Lebanon

### Date

Mar. '06 – Mar.'07

### Project Description

The Global Mechanism was created to support the implementation of UN convention to combat desertification (UNCCD). It supports countries with seed money to develop financial strategies in order to mobilize resources for implementation of their national action programs. ELARD was hired by GM and UNDP Lebanon to prepare a resource mobilization strategy to implement the National Action Programme to Combat Desertification in the country which was finalized in 2003, this in close coordination with the Ministry of Agriculture (MoA). The study comprises five main modules: (1) assessment of the national context; (2) analysis of existing financial flows in Lebanon, (3) analysis of multi-lateral and bi-lateral funding opportunities, (4) analysis of public budgeting and mainstreaming of NAP objectives into the process and (5) analysis of applicability of innovative financing mechanisms including environmental swaps, CDM and others. ELARD experts have analyzed the internal budgeting system in Lebanon and assessed means to optimize the mobilization and allocation of resources for the implementation of sustainable land management initiatives. A detailed donor matrix was also prepared to support beneficiaries in the identification of the right source of funding for different sectors. Last but not least, the institutional, legal, policy, and technical barriers to resource mobilization were identified and steps to overcome these barriers proposed. A detailed action plan was developed as a road map to improve the capacity of Lebanon and its private and public institutions in the mobilization and allocation of resources.

Project implementation included close coordination with key stakeholders such as MoE, CDR and other relevant bodies. The strategy, first to be developed among the countries supported by GM, was presented by MoA and ELARD during the CRIC 5 of the CCD meeting in Buenos Aires, as a case study to be followed by other countries. ELARD is also implementing regional training workshops with GM on the development of integrated financial strategies.



### Scope of Work

- Analysis of national context including synergies and linkages among key international conventions
- Assessment of existing financial flows
- Analysis of multi-lateral and bi-lateral funding opportunities
- Analysis of public budgeting mechanism and entry points for NAP in the process
- Analysis of innovative financing mechanisms and their applicability to Jordan including CDM, environmental swaps, carbon sequestration and others.
- Organization of consultation meetings and a multi-stakeholder dissemination workshop
- Design and implementation of regional training workshops on development of integrated financial strategies.

## SUPPORTING THE JUDICIARY SYSTEM IN THE ENFORCEMENT OF ENVIRONMENTAL LEGISLATION (SEEL)

## Client

United Nations Development Program (UNDP)

## Location

Lebanon

## Executing Agent

Ministry of Justice

## Date

Jul. '08 - Jul. '10

## Project Description

The SEEL project is co-funded by the World Bank and UNDP, and is implemented at the Ministry of Justice (MoJ). The overall project goal is to improve environmental protection and hence lead to a better quality of life in Lebanon by strengthening the enforcement of environmental legislation. This goal is achieved by strengthening the capacity of the Ministry of Justice in the enforcement of environmental legislation through institutional strengthening, capacity building and awareness.

ELARD is working with a team of local and international, legal and technical experts to compile published and unpublished Lebanese environmental jurisprudence, research French and Canadian environmental jurisprudence, analyze local environmental jurisprudence, and compare it with international jurisprudence.

The resulting reference book and on-line database developed will guide judges in the field of environmental jurisprudence and the enforcement of relevant legislation

## Scope of Work

- Development of a reference book on environmental jurisprudence with a comparative analysis with international (French and Canadian) cases to be used as a tool for enforcement and adequate decisions during cases of environmental non-compliance;
- Developing an on-line database of environmental jurisprudence; and
- Training judges and disseminating the reference book.



## STRENGTHENING THE ENVIRONMENTAL LEGISLATION DEVELOPMENT &amp; APPLICATION SYSTEM IN LEBANON



Client	Location
European Committee	Lebanon
Beneficiary	Date
Ministry of Environment (MoE)	Jun. '03 – Sep. '05

### Project Description

The Project is a Life third Country projected that is funded by the European Community, implemented by, and executed by the Ministry of Environment. ELARD was retained as the External Consultant of the project. The main Tasks of ELARD are:

1. The Diagnosis of the current environmental legislation which includes: a) a background review on environmental legislation practice at the international, and regional levels; b) comprehensive review of Lebanese legislation that tackles environmental issues; c) a search and review of international conventions, protocols and treaties that Lebanon has signed, or should be signing; and 3) Construct a legislation and functional responsibility matrix for the various environmental related sectors;
2. Capacity building in environmental law development by organizing and conducting a series of training to targeted stakeholder on: a) how to properly draft environmental legislation and mainstreaming environment in proposed legislation; b) how to conduct strategic environmental assessment (SEA), including socio-economic assessment, for the proposed legislation; and c) how to study the proposed conventions, protocols and treaties. The training participants include: MoE staff, members of Parliament, Council of States members and, Lawyers, and personnel from relevant department of other line ministries;
3. Develop selected pilot environmental legislation; and
4. Capacity building in Environmental Law Application by: a) conducting a series of training on Environmental litigation to lawyers and judges; b) conducting a series of seminars to the municipalities, line ministries and public agencies, to expose them to environmental legislation related to their specific sector of interests and to their respective responsibility as well as in sharing with them ways of mainstreaming environment in their receptive plans and projects.



### Scope of Work

- Categorize and differentiate between the impacts on the environment due to lack of proper legislation and regulations and those due to lack of proper implementation of the existing legislation and regulations, through a thorough diagnosis of the current environmental legislative setting. Resource Mobilization
- Strengthen the capacities of the institutions dealing with the drafting and enactment of environmental legislation and regulations and enhance the collaboration between those various institutions
- Strengthen the capacities of the institutions dealing with the implementation of environmental legislation and regulations and enhance the collaboration between those various institutions
- Disseminate environmental law information and practices to all interested stakeholders.



## Client

Council for Development and Reconstruction (CDR)

## Location

## Date

Lebanon (Sidon, Tyre, Baalbeck, Byblos and Tripoli)

Sep. '07 – May '11

## Project Description

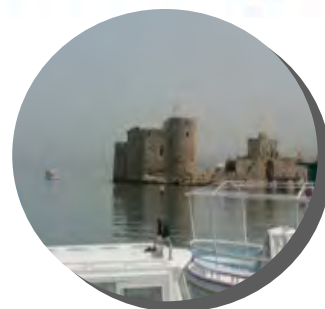
The CHUD project aims at rehabilitating and protecting selected historical and archeological sites in Lebanon while facilitating economic and civic development at the local and national levels. It helps improve the quality of life of the population living in and around the heritage sites and encourages cultural tourism in Lebanon. The project targets the historic old centers of five Lebanese cities where cultural inheritance is predominantly found: Baalbek, Saida, Tyre, Byblos and Tripoli. Baalbeck, Byblos and Tyre are on UNESCO's World Heritage List. The main components of the project are:

- The preservation and management of archaeological sites and development of their surroundings, thus enhancing visitor experience;
- Rehabilitation of historic city centers and urban infrastructure improvements which are carried out in and around the old towns to complement ongoing private conservation initiatives, attract and service tourists, and benefit the local community;
- Institutional strengthening to assist municipalities, the Directorate General of Antiquities and the Directorate General of Urban Planning in playing their respective roles in preserving cultural heritage and deriving economic benefits for the country and the residents of the cities concerned.

The project is managed by the CDR through a Project Management Unit (PMU); and is financially supported by the World Bank and the French Development Agency (AFD) as well as the Governments of France, Italy and Lebanon.

## Scope of Work

- Development of a baseline environmental monitoring report to present the baseline conditions (air quality, noise, traffic, water quality, solid waste and wastewater management) within the CHUD Phase II Study Area in each of the five cities;
- Periodic inspection and evaluation of the implementation of environmental mitigation measures in the different sites and submission of relevant reports;
- Organization and delivery of training workshops for municipalities on environmental management and regulations, problem identification and analysis, and the implementation of an environmental management plan;
- Reporting of environmental conditions following the implementation of the project in each of the five cities.



## ASSESSMENT OF THE INSTITUTIONAL AND LEGAL SETTING FOR COASTAL ZONE MANAGEMENT IN LEBANON



### Client

University of Balamand (UoB)

### Location

North Lebanon

### Date

May '07 – Oct. '07

### Project Description

The "Assessment of the Institutional and Legal Setting for Coastal Zone Management in Lebanon" is part of the "Integrated Management of East Mediterranean Coastlines Project" that is funded by the European Union (SMAP) and implemented by the Marine Resources and Coastal Zone Management Program of the Institute of the Environment- University of Balamand.

The project's goal is to introduce and establish long-term mechanisms and management procedures for coastal zone management that are initiated and endorsed by all stakeholders, through launching a process of integrated coastal zone management (ICZM) in Northern Lebanon with participation from municipalities, line ministries, public institutions, as well as stakeholders from the private sector, academia, and civil society. That ICZM process could be adopted for the rest of the coastal zone in Lebanon.

ELARD teamed up with a legal firm (Alem & Associates) to assess the legal and institutional framework for CZM in Lebanon, hold a roundtable for all concerned stakeholders, and come up with recommendations regarding the update of current legislation, adoption of new legislation, resolution of conflicts, ways to overcome institutional fragmentation, training needs of officials in relevant institutions, and mechanisms/ procedures providing for stakeholder involvement in ICZM in the long term.



### Scope of Work

- Assessment of the legal and institutional framework for coastal zone management in Lebanon (laws and regulations, status of their implementation and enforcement, gaps and conflicts, mandates and competences of concerned public institutions, relevant overlaps and gaps, existing coordination and communication mechanisms, capacities and training needs, etc.);
- Preparation of a draft report based on the above assessment;
- Organization of a roundtable meeting for stakeholders in order to discuss the draft report and come up with recommendations and suggestions; and
- Preparation of a final report addressing the suggestions and recommendations of all stakeholders.



## STRATEGIC ENVIRONMENTAL ASSESSMENT & LAND USE PLANNING – BALOUH BAATARA, NORTH LEBANON



Client	Location
European Commission – LIFE Programme	North Lebanon
Executing Agent	Date
Ministry of Environment	Apr. '05 – Feb. '06

### Project Description

The area of Balouh Baatara, Chatine-Batroun North Lebanon has been selected for the implementation of a pilot study on the application of Strategic Environmental Assessment (SEA) to land use planning. The SEA comprised of four major steps including (1) baseline assessment and scoping, (2) analysis of alternatives, (3) description of preferred development plan, (4) impact assessment and environmental management plan.

The SEA was conducted in a highly participatory manner, whereby at each stage a participatory workshop was conducted including key stakeholders to the project. The workshops were structured so as to allow for direct input of the stakeholders to the study, including identification of issues of concern, selection of criteria and alternatives, determination of importance of criteria (weights), and validation of final plan, impact assessment, and EMP.

The final plan and SEA were approved by the Higher Council for Urban Planning and serves as a pilot study for further replication in the country.



### Scope of Work

- Review of legal and institutional framework
- Baseline assessment and scoping including environmental and socio-economic study;
- Analysis of alternatives to the land-use plan
- Detailed description of selected land-use plan
- Detailed environmental and socio-economic Impact assessment of plan
- Compatibility analysis
- Institutional analysis and capacity building plan
- GIS database preparation and finalization
- Development of an Environmental Management Plan
- Organization of 4 participatory workshops



STRATEGIC ENVIRONMENTAL ASSESSMENT & LAND USE PLANNING  
IN LEBANON

Client	Location
UNDP/ European Committee	Lebanon
Executing Agent	Date
Ministry of Environment	Aug. '03 – Mar. '04

### Project Description

The Project is financed by the European Commission, Life Third Countries programmes, executed by the Ministry of Environment and managed by UNDP. It aims at integrating environmental considerations into public decisions and undertakings, through the application of SEA, to alleviate major problems facing national sustainable development. ELARD was retained as the External Consultant of the project. The main Tasks of ELARD are:

- 1) The review of SEA process and application procedures worldwide and the evaluation of different SEA Institutional models and relevant regulatory arrangements.
- 2) The assistance in the establishment of an SEA model for Lebanon by: a) proposing different alternatives relevant to the Lebanese context taking into consideration current environmental management practice and capabilities, related to strategic actions, current approaches to social issues and other institutional factors; b) discussing the merits value-added, disadvantages and feasibility of these models, and propose the most adaptable option to the Lebanese context.
- 3) The development of a scope of application and adoption by: a) Identifying sectors for application of SEA at the national level and relevant communication channels; b) reviewing current approach in public planning and decision-making in the identified sectors; c) specifying the coverage of SEA within the identified sectors; d) determining criteria against which SEA is to be applied as per tier (policy, plan, or programme), scale (national, regional, local) – screening stage; f) identifying and elaborating on relevant approaches, methodologies and tools for conducting SEA as per identified sectors; and g) setting the terms and procedures for assessing potential implications of SEA application per priority sector
- 4) The development of a monitoring process for the proposed SEA model by: a) developing a monitoring strategy for the proposed SEA process including targets and indicators; b) developing a note on the institutional framework per priority sector illustrating implementation and monitoring arrangements, resource and training requirements, potential policy development; and c) setting standards per selected sector against which the effectiveness of SEA can be evaluated.
- 5) Develop a draft Decree to institutionalize the proposed SEA process in Lebanon.

### Scope of Work

- Developing the framework for Strategic Environmental Assessment (SEA) for Lebanon
- Building relevant institutional capacities at the Ministry of Environment, the Directorate General of Urban Planning as well as other concerned line ministries and stakeholders
- Applying SEA framework for the development of environmental guidelines to be applied to land use planning at the national level.

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY FOR THE BEIRUT AWALI WATER CONVEYOR PROJECT



### Client

Council for Development and Reconstruction (CDR)

### Location

Lebanon

### Date

Mar. '10 – Aug. '10

### Project Description

The project aims at securing a sustainable source of potable water to Greater Beirut to overcome the existing deficit and meeting the city's potable water requirements on the short and medium term.

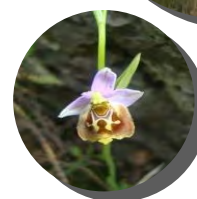
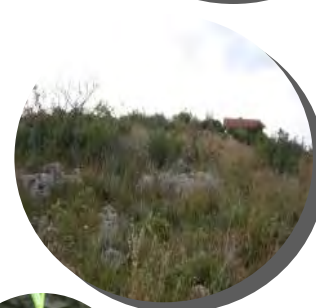
The Project encompasses the following components:

1. The construction of a transmission conveyor from the Awali River just north of Saida to Beirut (Awali-Beirut Conveyor);
2. The construction of water supply networks within Greater Beirut area to distribute the water supplied through the conveyor to the inhabitants of the area (Greater Beirut Water Supply Networks).

The Awali-Beirut Conveyor will supply, by gravity, the Greater Beirut area with approximately 250,000 m<sup>3</sup>/day (3 m<sup>3</sup>/s) during the dry season. The conveyor will meet the needs of Greater Beirut in the short to medium terms.

The Greater Beirut Water Supply Networks component comprises construction of 16 reservoirs (between 500 m<sup>3</sup> and 1000 m<sup>3</sup> storage capacity each), replacement and/or installation of approximately 187 km of distribution network and associated pumping stations as well as Installation of 200,000 household meters in portions of the project area to be selected by the GBMLWWE and to operate on a volumetric tariff basis.

Construction works are expected to be completed within four years.



### Scope of Work

- Data Collection and Assessment
- Legal and Institutional Framework;
- Analysis of Alternatives;
- Environmental and Social Baseline;
- Public Participation, and consultations meetings;
- Environmental and Social Impacts Assessment;
- Environmental and Social Management Plan (ESMP) including mitigation, monitoring, and institutional strengthening-capacity building and training;
- The Resettlement Action Plan (RAP) identifies all the impacts on the residence, economic activities and assets caused by acquisition of land. The RAP identifies people affected by the project, describes the nature and scale of the impacts, identifies the mitigation measures to be taken and specifies the legal and institutional framework responsibilities that, together, will ensure that all losses incurred by the taking of land or imposition of other restrictions are fully compensated and do not face any kind of diminution of livelihoods or assets.

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE EXTENSION OF  
AL-GHADIR WASTEWATER TREATMENT PLANT

## Client

EIB (sub-contracted by the Atkins/LDK  
Consultants/Pescares Consortium)

## Location

Al-Ghadir, Lebanon

## Date

Dec. '10 – Ongoing

## Project Description

ELARD has been contracted to conduct an Environmental Impact Assessment (EIA) for the implementation and operation activities planned for the extension of the Al-Ghadir WWTP in Ghadir, Lebanon.

The Al-Ghadir WWTP extension project's overall objectives are:

- To improve the quality of coastal waters and beaches of the Greater Beirut area and consequently contribute to reducing pollution of the Mediterranean Sea;
- To improve the quality of life for inhabitants of the Ghadir basin area by improving their environment, and providing better sanitation services;
- To improve economic development in the long run, by creating better conditions for tourism, and recreation industry in the area.

A preliminary Wastewater treatment plant serves the area since 1998, where sewage is currently being collected, pre-treated, and discharged into the Mediterranean Sea via a long sea outfall. The extended WWTP is to serve an extended drainage area in addition to upgrading the wastewater treatment process.

As such, ELARD is to assess the national and international legislative framework relevant to the project, and identify major impacts, positive and negative, related with the project implementation and operation. ELARD is also to conduct public consultation meetings in accordance with Lebanese and EIB requirements for EIAs.

In addition, ELARD is to analyze and compare a set of alternative project designs as part of an Analysis of Alternatives study. Finally, a Mitigation Management Plan, an Environmental Management Plan, and a Monitoring Plan are to be prepared with a view to mitigating and monitoring any potential negative impacts resulting from the project.



## Scope of Work

- Analysis of the socio-economic situation and administrative status in the Al-Ghadir WWTP Project Area;
- Identification of major stakeholders and target groups involved in the Project;
- Analysis of Solid Waste Management practices and facilities in the Project Area;
- Assessment of potential for treated effluent reuse;
- Identification of relevant national and international legislation;
- Identification of major impacts, positive and negative, related with the project implementation and operation;
- Public consultation on initial screening results in accordance with the national legislative requirements on EIA procedures;
- Drafting of an environmental assessment report incorporating public consultation comments

## ENVIRONMENTAL IMPACT ASSESSMENT FOR DREDGING ACTIVITIES IN THE ABDEH HARBOR, NORTH LEBANON



### Client

United Nations Development Programme (UNDP)

### Location

North Lebanon

### Date

Oct. '08 – Oct. '09

### Project Description

ELARD was retained by UNDP and the Ministry of Environment (MoE) to develop detailed inventories for dioxins and furans using UNEP's guidelines, and POPs pesticides; prepare the national environment and health profile for the country, and develop a national implementation plan for the management of POPs chemicals, including dioxins/furans, pesticides and PCBs, to meet national obligations towards the Stockholm convention. The studies were conducted in a highly participatory manner, whereby several multi-stakeholder forums were organized to discuss and validate the documents. All key stakeholders, in addition to MoE, with responsibility towards POPs management were involved. These included the Ministries of Agriculture, Energy and Water, Economy and Trade, Public Works and Transport, Health, Finance, Labor, as well as the electricity companies and representatives of major industrial facilities.

### Scope of Work

- Identify existing national and international legislation with particular emphasis on coastal zone management;
- Bathymetric Survey and Marine Ecological Investigation;
- Sediment Sampling and Geotechnical Analysis;
- Potential Impact identification and Evaluation on Marine Environment from Dredging and Transport Operations;
- Propose alternatives for dredge material handling and management; and
- Prepare an Environmental Management Plan (including mitigation and monitoring plan)

## COASTAL AREA MANAGEMENT PROGRAMME - LEBANON



## Client

PAP/RAC  
(funded by UNEP/MAP)

## Location

Lebanon

## Date

Jul. '02 - Oct. '03

## Project Description

ELARD was hired by PAP/RAC to prepare an Integrated Water Resource Management (IWRM) plan as part of the Coastal Area Management Programme (CAMP) for Lebanon. The project is executed by the Ministry of Environment (MoE).

The objective of CAMP-Lebanon is to promote sustainable development along the Lebanese coast by integrating urban planning, environment, eco-tourism, cultural heritage and water resource management in a participatory manner. The selected study area is the southern stretch of the Lebanese coast extending from Damour down to the newly liberated Naqoura. Pilot studies were conducted in the municipalities of Damour, Sarafand, and Naqoura.

The work included review of previous studies in the study area, detailed geological and hydrogeological investigations, water quality characterization, and field surveys in a fully participatory approach. Systemic prospective and sustainability analysis (SPSA) approach was used to develop indicators to be used by the local communities to monitor the quality of their coastal areas at all aspects. Several workshops, working groups and participatory rapid appraisals (PRAs) were organized to involve the largest possible number of stakeholders in the project development.

Specific strategies and recommendations to promote sustainable use of the water resources and integrated coastal zone management in the study area, and more specifically in the three pilot municipalities were formulated. The recommendations focused on technical, social, and economic aspects of water resource management. Practical day-to-day measures as well as medium to long-term strategies were included. Municipal action plans integrating environmental matters were devised and validated in close coordination with the local authorities and communities. Last but not least, the consultants participated in the development of a strategy for integrated coastal zone management at the target region and the preparation of a draft law for coastal zone management in Lebanon.

## Scope of Work

- Assessment of water resources in the study area in both quantitative and qualitative aspects
- Review of legal and institutional frameworks related to water resource management in the study area
- Organization of stakeholders meetings to promote cooperation and consensus during strategy formulation
- Review of the role of economic instruments in coastal zone management
- Preparation of an integrated water resource management plan for the pilot municipalities
- Identification of sustainability indicators to be used by the municipalities for monitoring water resource management activities
- Participation in the formulation of a coastal zone management strategy
- Participation in the formulation of a draft law for integrated coastal zone management in Lebanon





## ENVIRONMENTAL IMPROVEMENT PROGRAMME IN THE RURAL AREAS OF JBEIL AND HIGHER CHOUF, LEBANON



Client	Location
Pontifical Mission / USAID	Jbeil and Higher Chouf, Lebanon
Beneficiary	Date
Municipalities	Jul. '03 – Jun. '06

### Project Description

This project is financed by the United States Agency for International Development (USAID) and aims at improving the environmental conditions in rural areas in Lebanon by providing adequate solid waste and wastewater infrastructure in addition to building the capacity of the local communities and raising environmental awareness in these areas.

ELARD worked closely with Pontifical Mission in this project to secure the following: 1) completion of the EIA's for approval by the MoE; 2) preparation of technical specifications, evaluation of sub-contractors, and supervision of works; 3) organization of the inception workshops to involve all stakeholders at the early stages of the project; 4) preparation and delivery of specialized technical workshops to train specific stakeholders on the different issues related to solid waste and wastewater management; 5) organize environmental awareness campaigns for unions of municipalities; and 6) implement a sorting at the source programme by closely working with municipalities and community-based groups to ensure sustainability of the program.

### Scope of Work

- Preparation of specifications, assistance in bidding process, and tenders review
- Supervision of works
- Environmental Impact Assessment studies
- Training and capacity building in solid waste and wastewater management principles
- Environmental awareness campaign
- Implementation of a programme to promote sorting at the source in 13 pilot villages and towns.



## EVALUATION OF THE ROSS EMERGENCY PROGRAM (2006-2008)



## Client

---

Development Researchers' Networks

---

## Location

## Date

---

Lebanon

---



---

Feb. '09 – Apr. '09

---

## Project Description

---

ELARD was assigned as a local subcontractor to evaluate the implementation (concerning the Environmental sector) of the ROSS programme.

Where Field Visits were conducted to various areas of the south were visited in order for the evaluation of the Programme such as; Aytatoun, Bakkifa, Dhaira, Majdel Zoun, Bint Jbeil, Kfarsir, Khirbet Selem, Bkassine, Jezzine, Kfarshouba, Qaitouly and Rihane

## Scope of Work

- 
- Review the Action plan for the implementation and follow-up of recommendations
  - Analyze and validate the main results obtained - and process followed - during the implementation of the ROSS programme in order to:
    - improve the strategic scope of the Italian Cooperation in Lebanon and related actions;
    - set the basis to bridge emergency and development actions;
    - provide the opportunity for a process of training and in-depth analysis for the staff of the Italian Cooperation Office in Lebanon and the NGOs which have participated in the programme.
  - The results of the evaluation will be used to guide/orient the new phases of the programme, and provide informed advice on the programme's strengths and weaknesses. The identification of lessons learnt and their transferability, with a view to improving the forthcoming phases of the ROSS programme as well as other relevant programmes, together with the formulation of recommendations



## STRATEGIC ENVIRONMENTAL ASSESSMENT FOR THE JOUNIEH BOULEVARD MASTER PLAN – LEBANON



Client	Location
Directorate General of Urban Planning (DGUP)	Lebanon- Jounieh Bay
Executing Agent	Date
DGUP	Jun. '05 – Oct. '05

### Project Description

This Strategic Environmental Assessment (SEA) has been prepared to anticipate, evaluate and mitigate the possible environmental, social and economic impacts from the implementation of the Jounieh Boulevard Master Plan (JBMP), which aims at promoting the tourism industry in Lebanon, enhancing the Lebanese international and local image as a tourist destination, improving the living conditions in the Jounieh area, and most importantly, bring corrective measures and improvements to the degraded coastline of the Jounieh Bay. The SEA study is important since it addresses the issues of further development and construction activities in the Jounieh bay area, with emphasis on the social and economic benefits that it brings, the environmental soundness of the proposed plan, and most importantly the balance between the two.

The Jounieh Bay is currently characterized by the presence of illegal constructions and activities along the coastline, coupled with inappropriate infrastructure facilities which have led to the degradation of the marine environment and ecology. Nevertheless, Jounieh is still considered as a potential tourist attraction which is poorly exploited.

In the SEA study, several alternatives were assessed and compared according to environmental, social, and economic criteria, and included the Do-Nothing scenario in addition to several variants of the basic plan. Environmental impacts of the retained alternative were assessed, including cumulative impacts, and mitigation and monitoring plans were developed as part of the environmental management plan. Institutional and capacity building measures were also recommended.

### Scope of Work

- Review of legal and institutional frameworks
- Environmental Baseline Study, including marine biodiversity and hydrodynamics;
- Impact scoping and assessment
- Analysis of Alternatives



REGIONAL SOLID WASTE MANAGEMENT PROJECT IN MASHREQ AND  
MAGHREB COUNTRIES, NATIONAL ACTIVITY IN LEBANON

## Client

The World Bank Mediterranean  
Environmental Technical Assistance  
Program - METAP

## Location

Lebanon

## Executing Agent

Ministry of Environment (MoE)

## Date

May '04 – Jun. '05

## Project Description

The Regional Solid Waste Management Project (RSWMP) in Mashreq and Maghreb Countries is a regional project addressing the waste management needs of eight beneficiary countries in the Mediterranean region: Algeria, Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia, and West Bank and Gaza.

The objective of the RSWMP is to promote the adoption of integrated and sustainable solid waste management (ISWM) through:

- I. Providing the necessary tools to the beneficiary countries for designing, developing and implementing the main elements of ISWM;
- II. Promoting the exchange of solid waste management information and experiences within the region.

The RSWMP gave special consideration to a range of issues, which go far beyond the technical aspects, such as ISWM policy, legal and institutional issues; financing and cost recovery; private sector participation; and public awareness and community participation.

## Scope of Work

- Strengthening the existing Solid Waste Management (SWM) legal framework in Lebanon. This task includes the preparation of:
  - Law on Integrated Waste Management
  - Decree(s) of Application on Financing and Cost Recovery Mechanisms for SWM
  - Application Decree on Private Sector Participation in SWM.
- Development of national and municipal capacities for applying, enforcing and monitoring the strengthened legal framework. Includes the preparation of
  - National Capacity Building Workshops
  - Local Capacity Building Workshops
  - Dissemination Workshop
- Development of an economic model with relevant implementing tools that assist in selecting preferred SWM systems and defining costs.
- Application of two of the regional SWM guidelines (financing/cost recovery and private sector participation) through on-the-job training of central or local government authorities.



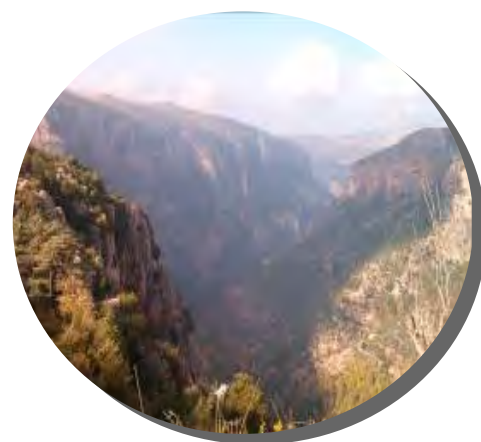
## ENVIRONMENTAL IMPACT ASSESSMENT FOR THE TOURISM DEVELOPMENT PLAN IN THE DISTRICT OF BCHARRE, LEBANON (JICA)



Client	Location
JICA	Bcharre- North Lebanon
Executing Agent	Date
Ministry of Tourism and the Council for Development and Reconstruction (CDR)	Nov. '03 – Feb. '04

### Project Description

ELARD was retained by the JICA Study Team (JST) to conduct an Environmental Impact Assessment (EIA) study to assess the possible impacts from the tourism development plan in the district of Bcharre, including the holy Qannoubine valley, which is a World Heritage Site (WHS). The tourism development plan aims at improving the tourism potential of the highlands of Bcharre, by ameliorating tourism infrastructure, and highlighting cultural heritage sites and tourism attractions in the region. The EIA focused on the impacts on biodiversity (especially endangered species), air quality, noise, water resources, heritage, and landscape, and a comprehensive environmental management plan was developed to ensure the protection of these resources, including mitigation and a monitoring plan.



### Scope of Work

- Baseline assessment/monitoring of fauna and flora, air and noise, social conditions and traffic counts
- Impact assessment of tourism development on local resources
- Development of an environmental management plan (EMP)



## INITIAL ENVIRONMENTAL EXAMINATION OF THE TOURISM DEVELOPMENT PLAN IN THE DISTRICTS OF BAALBECK AND ZAHLE (JICA)



## Client

JICA/Ministry of Tourism/CDR

## Location

## Date

Baalbeck and Zahle- Lebanon

Jul. '03 – Sep. '03

## Project Description

As part of the tourism development plan for the Republic of Lebanon prepared by JICA in coordination with the Ministry of Tourism and the Council for Development and Reconstruction (CDR), a regional study for the conservation and promotion of the cultural heritage and tourist resources of the districts of Baalbeck and Zahle was developed. ELARD was retained to assess the possible impacts of tourism development on these environmental, cultural and social resources in these areas. In particular, ELARD surveyed over 50 cultural heritage sites, assessed their vulnerability, and proposed measures to conserve these resources.

## Scope of Work

- Survey/monitoring of cultural heritage sites in Baalbeck and Zahle
- Biodiversity survey
- Social assessment
- Assessment of vulnerability of cultural heritage sites and proposal of mitigation measures



## Client

The Global Mechanism of the UNCCD (GM)

## Location

## Date

Global (Lebanon, Jordan, Iran, Sri Lanka, Cambodia, Vietnam, Costa Rica, Lisboa, Tunis)

2006 - 2010

## Project Description

The Global Mechanism was created to support the implementation of UN convention to combat desertification (UNCCD). It supports countries with seed money to develop financial strategies in order to mobilize resources for implementation of their national action programs. ELARD was hired by GM to support in its mission. ELARD has supported the preparation of resource mobilization strategies in Lebanon and Jordan. The strategy typically comprises of five main modules: (1) assessment of the national context; (2) analysis of existing financial flows, (3) analysis of multi-lateral and bi-lateral funding opportunities, (4) analysis of public budgeting and mainstreaming of NAP objectives into the process and (5) analysis of applicability of innovative financing mechanisms including environmental swaps, CDM and others.

ELARD has used its experience in developing the strategies to develop a manual on Designing Integrated Financial Strategies (DIFS) for sustainable land management and to design a 5-day interactive training program on DIFS. ELARD designed the training program, prepared a training manual, powerpoint presentations, role play and other interactive modules to be used during the training workshop; the training manual was highly acclaimed and was translated from English into 5 other languages for global distribution (French, Spanish, Portuguese, Russian, and Arabic).

ELARD also participated in the delivery of the DIFS training in Amman (regional for Levant countries), Tunis (regional for French speaking African countries), Isfahan (Iran), Cambodia, Vietnam, Sri Lanka (regional for South Asia countries), Costa Rica (regional for Central America countries), and Lisbon (regional for Portuguese speaking countries); the training workshops were delivered to high-level participants from Ministries of Environment, Agriculture, Finance and Economy).

ELARD had also the opportunity to present the IFS experience during the CRIC 5 of the CCD meeting in Buenos Aires, as a case study to be followed by other countries.

## Scope of Work

- Preparation of IFS for Lebanon and Jordan
- Preparation of training manual and training materials on DIFS
- Implementation of regional training workshops on development of integrated financial strategies in various countries



## UNIT OF PLANNING AND PROGRAMMING MINISTRY OF ENVIRONMENT, LEBANON



### Client

World Bank / METAP

### Location

Ministry of Environment, Lebanon

### Date

Oct. '99 - Jun. '01

### Project Description

The purpose of the project, financed by the World Bank, is to establish the unit of planning and programming (UPP) at the Ministry of Environment (MoE) of Lebanon. The most important activities undertaken by the UPP directed by Mr. Kayal, president of ELARD are:

1. The establishment of an EIA system studies at the Ministry of Environment. Work included developing the EIA application decree, guidelines and administrative procedures for the EIA system (such as review procedures), conducting an extensive environmental awareness campaign and providing specialized training workshops targeting specific sectors such as dams & reservoirs, industries, harbors & marinas, waste water treatment plants, quarries, and roads and highways
  2. Work coordination between various projects funded by foreign organizations such as World Bank, UNDP, UNEP, and GEF, in order to avoid duplication of work.
  3. Development of terms of reference for new environmental projects, including budget allocation and financial resource mobilization (Sources of funds: GEF; Italian Trust Funds, Swiss Trust Fund and EC-Life).
- Initiation of projects on policy making such as: amendment of the decree regarding the air quality standards and gas emission levels generated from diesel fuel motor vehicles and development of the legislation related to the establishment of the hazardous waste management system and unit at MoE the management of hazardous and hospital wastes.

### Scope of Work

- Establishment of the Environmental Impact Assessment (EIA) System in Lebanon.
- Organisation of series of awareness campaigns (30) and training sessions (6) on EIA to different stakeholders and target audiences
- Resource Mobilization
- Institutional Reinforcement and Reorganization of the Ministry

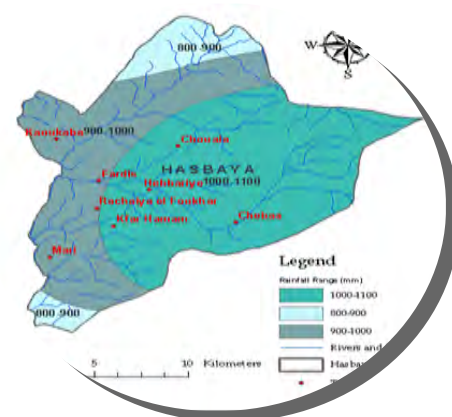
## ENVIRONMENTAL IMPACT ASSESSMENT OF WASTEWATER TREATMENT PLANTS IN HASBAYA RIVER BASIN



Client	Location
USAID	Hasbaya- South Lebanon
Executing Agent	Date
Mercy Corps	Apr. '04 – Apr. '05

### Project Description

As part of the MCI environmental program financed by USAID, ELARD was selected to assess the impacts of the proposed domestic and vegetable waters wastewater treatment plants to be executed in 13 villages of the Hasbaya Caza. The EIA studies have focused on assessing alternative technologies, proposed sites, and suitable mitigation measures, especially given the importance of water resources in the area. The study area is not only rich in groundwater resources but is also the catchment area for the Hasbani River. Impacts of the proposed interventions in the area on the quality of the river were assessed both on regular operation and accidental spills or discharges. A sampling campaign for surface and groundwater was developed and conducted to assess baseline conditions. ELARD supported in capacity building of plant operators during the construction phase and in the implementation of the proposed EMP.



### Scope of Work

- Characterization of the river basin (baseline conditions);
- Analysis of different wastewater treatment technologies
- Site selection
- Assessment of the impacts of the projects on surface and groundwater
- Recommendation of mitigation measures and an environmental management plan to ensure the sustainability of the projects
- Capacity building
- Implementation of EMP

## ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE TYRE GOVERNMENTAL HOSPITAL



## Client

---

Council for Development and Reconstruction (CDR)

---

## Location

## Date

---

Lebanon

---



---

Oct. '13 - Jun. '14

---

## Project Description

---

The Tyre Governmental Hospital is being designed to meet the highest standards in the health sector. ELARD has been assigned by CDR to prepare the Environmental Impact Assessment for the project, with a major focus on addressing health care waste management. ELARD used recent WHO guidelines in developing the recommendations to the client.

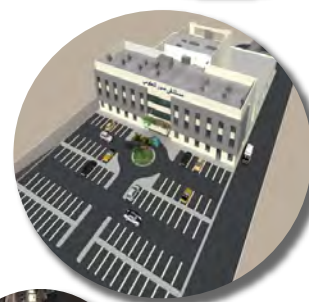
---

## Scope of Work

---

The main Tasks of ELARD were:

- Preparation of guidelines for the collection, handling, storage, treatment and final disposal of treated wastes and residues using WHO guidelines;
  - Analysis of alternatives focusing on health care waste management options for each type of waste generated by the Hospital.
  - Preparation of a comprehensive EIA study.
- 





## ENVIRONMENTAL IMPACT ASSESSMENT OF THE CONSTRUCTION AND OPERATION ACTIVITIES IN NAHR EL BARED PALESTINIAN CAMP (NBC) – NORTH LEBANON



### Client

United Nations Development Programme (UNDP)

### Location

North Lebanon

### Date

Oct. '09 – Sep. '10

### Project Description

ELARD was commissioned by UNDP to conduct an Environmental Impact Assessment (EIA) for the reconstruction activities and rebuilding operations of the Nahr El Bared Palestinian Camp (NBC), situated North of Lebanon.

The main objective of the project was to reconstruct the NBC in a way that satisfies the population needs while upgrading the environmental and health conditions that existed prior to the conflict, taking into consideration all the geographical environmental and contextual constraints.

The EIA processes aims at covering all aspects of UNDP's planned recovery intervention plans (including short-term and long-term plans) and full fledged reconstruction works to ensure environmentally responsible and safe operations by its various sub-contractors and personnel as well as sustainability of future operations.

Public Consultation Meetings were held to inform the public of the proposed UNDP project and to obtain feedback and concerns relating to this project and which are to be addressed in more details in the EIA study. These included representatives from key concerned Ministries and surrounding municipalities.



### Scope of Work

- Site reconnaissance visit
- Collection and Review of Existing Site Information
- Organize and implement Public Consultation Meetings
- Soil, seawater, air and noise sampling
- Marine Biodiversity Assessment
- Environmental impacts assessment and identification
- Marine impact assessment and sea outfall modeling
- Identification of mitigation measures
- Development of An Environmental Management Plan
- Analysis of Alternatives

## STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) OF HYDROCARBON E&P ACTIVITIES IN OFFSHORE MONTENEGRO



### Client

Ministry of Economy

### Location

Montenegro

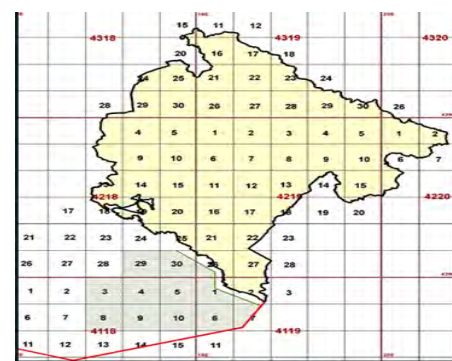
### Date

Mar. '14 - Oct. '14

### Project Description

The government of Montenegro is preparing itself to launch its first licensing round for offshore hydrocarbon exploration and production. As part of this process, a Strategic Environmental Assessment (SEA) is being prepared to ensure that environmental and socio-economic impacts are identified, assessed and mitigated at the earliest stages of E&P activities.

ELARD is undertaking the study in collaboration with local consultants. The SEA includes a scoping phase and an assessment phase, and is being conducted in a highly participatory manner. The SEA study shall result in the preparation of an Environmental and Social Management strategy, including mitigation and monitoring measures that should be implemented by future operators, contractors and the government, to ensure environmental and social impacts are properly managed. The outcomes of the SEA study will be included as part of the contract conditions for the future exploration and production licensees.



### Scope of Work

- Preparation and delivery of an inception workshop
- Support to local team in data collection and development of an SEA framework of objectives, indicators and targets
- Preparation of a scoping report
- Analysis of alternatives
- Impact assessment
- Support in organization and delivery of public consultation sessions and public debate
- Support in preparation of the SEA report

## PHASE 2 AND 3 HSEIA STUDY FOR CARBON BLACK AND DELAYED COKER PROJECT (CBDC)

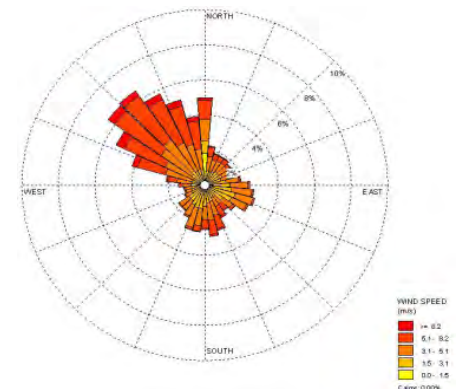


Client	Location
TAKREER	Abu Dhabi, UAE
EPC	Date
Samsung Engineering	Oct. '12 – Dec. '15

### Project Description

Takreer intends to implement the Carbon Black and Delayed Coker (CBDC) Project to manufacture UV Carbon Black, semi-conductive black and Calcined Coke utilizing the Slurry Oil from the Residue Fluidized Catalytic Cracker (RFCC) to be installed as part of the on-going Ruwais Refinery Expansion (RRE) Project, the residue from the vacuum distillation unit in existing Ruwais Refinery (RRD) and LPG from the RRE. The project comprises of new process facilities as well as existing process units that need to be revamped.

A Phase 1 HSEIA study has been prepared as part of the Front End Engineering Design (FEED) phase of the project. Takreer awarded ELARD to conduct the Phase 2 HSEIA study as part of the Engineering, Procurement and Construction (EPC) Phase of the project as well as the Phase 3 HSEIA study to cover the project operations phase.



### Scope of Work

The Preparation of Phase 2 HSEIA study for the EPC phase is divided into 2 stages;

- Stage one (1) categorized by the Phase 2 Early Works/Construction and which includes:
  - Baseline studies comprising of air and noise quality, soil and ground-water, and overall environmental Baseline Study.
  - HAZID/ENVID/OHID workshops
  - H&E Registers
  - Phase 2 Early Works/Construction HSEIA study
- Stage two (2) categorized by the Phase 2 Detailed Design includes;
  - HAZID/ENVID/OHID workshops
  - H&E Registers
  - HSE Studies (3D fire and gas mapping, dropped object study, EERA, ESSA, dust explosion analysis, air quality modeling, noise modeling, dredging plume dispersion modeling)
  - Phase 2 HSEIA Study
- Preparation of Phase 3 HSEIA for the operations phase of the project.
- Review, verification, and endorsement of EPC contractor HSE plans, studies and procedures.

## PRELIMINARY ENVIRONMENTAL ASSESSMENT FOR THE TWO PROJECTS, "14 MW" PV SOLAR POWER PLANT AND "60 MW" WIND FARM IN THE CITY OF DERNA AND HUN - LIBYA



### Client

Renewable Energy Authority of Libya (REAoL)

### Location

Derna and Hun cities, Libya

### Date

Jan. '13 - May '13

### Project Description

The project consists of two separate plants located in Derna and Hun cities, as follows:

#### 1. Wind farm of 60 MW

This project is under construction in the city of Derna (North East of Libya). It is expected to generate about 210 GWh/year.

The area of the Project is about 1180 hectares. Thirty seven (37) wind turbines (Torres Wind Turbine - TWT -1.65/82) with the capacity of 1.65 MW for each, and the height of 71 m will be installed.

The Project is expected to reduce Carbon Dioxide emissions by about 187,000 tons per year. The Project is planned to be constructed over a period of 24 months

#### 2. Solar PV of 14 MW

This project is under contracting stage to be erected in the city of Hun (Central South of Libya). It is expected to generate about 25 GWh/year.

The area of the Project is about 150 hectares. About 30 hectares will be used to execute the proposed Project, which will have the capacity of 14 MW. The Project will be established close to Hun city in Al Jafra area.

The average net annual electricity production rate is expected to be 23,140 MW during the crediting period.

The construction phase of the Project is planned to begin in the summer of 2014, and the project is expected to be operating within a year and a half from the beginning of the construction activities.



### Scope of Work

- Site reconnaissance (baseline study) and brief environmental assessment and prediction
- Brief environmental assessment and prediction



Beirut | Abu Dhabi | Dubai | Damascus | Tripoli | Basra | Maputo

[info@elard-group.com](mailto:info@elard-group.com)  
[www.elard-group.com](http://www.elard-group.com)