

**SELECTED PROJECT SHEETS**  
**GEOGRAPHIC INFORMATION SYSTEMS**

## Lebanese Agricultural Atlas

<b>Project</b>	Lebanese Agricultural Atlas
<b>Location</b>	Lebanon
<b>Client</b>	Food and Agriculture Organization (FAO) / Lebanese Ministry of Agriculture
<b>Services Provided</b>	Development of geographical databases / Digital mapping and cartography Data Processing and analysis data / Capacity building
<b>Completion</b>	2004
<b>Cost</b>	N/A

### Synopsis

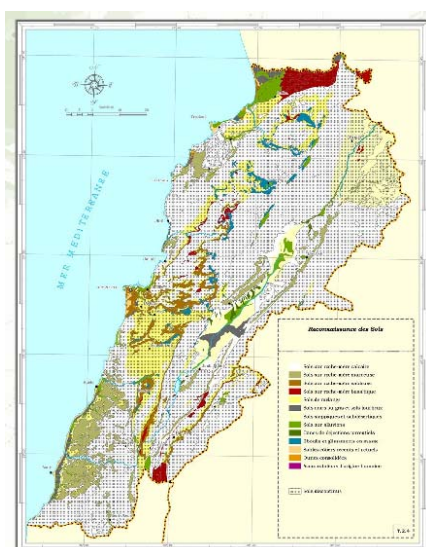
The project intended the visualization and mapping of the Lebanese agricultural census results in addition to agricultural relevant information layers, produce a hardcopy Agricultural Atlas and an interactive companion CD.

### Scope

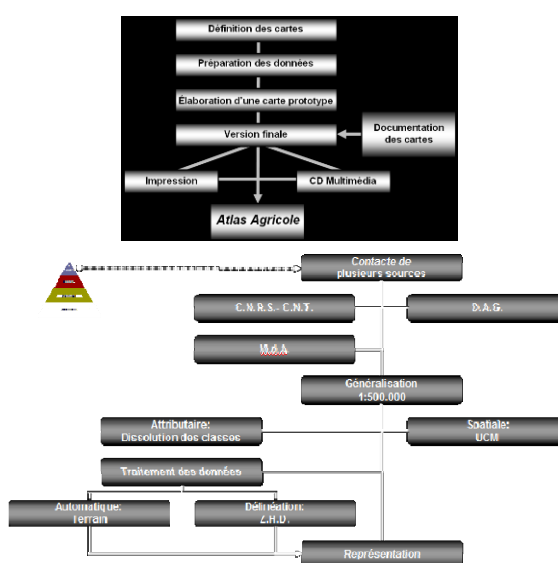
- Assessment of the existing data and information layers
- Atlas template design
- Mapping of agricultural relevant thematic information layers and base line data including soils, rainfall, evapo-transpiration, forests, land cover, desertification prone areas...
- Capacity building through the on the job training for the MoA staff in order to produce agricultural statistical maps
- Follow up on the Atlas production and its companion CD.

### Special Features

The Lebanese Agricultural Atlas is a premiere in Lebanon, as it is the first time where all the agricultural information layers and maps data are gather and compiled in one single document, in addition to making the agricultural census results available to the public in a comprehensive manner.



Agricultural Atlas soil map



Data preparation and project phases

## Forest Resources Assessment

<b>Project</b>	Forest Resources Assessment
<b>Location</b>	Lebanon
<b>Client</b>	Food and Agriculture Organization (FAO) / Lebanese Ministry of Agriculture
<b>Services Provided</b>	Development of geographical databases / Satellite images interpretation Digital mapping and cartography / Capacity building
<b>Completion</b>	2005
<b>Cost</b>	N/A

### Synopsis

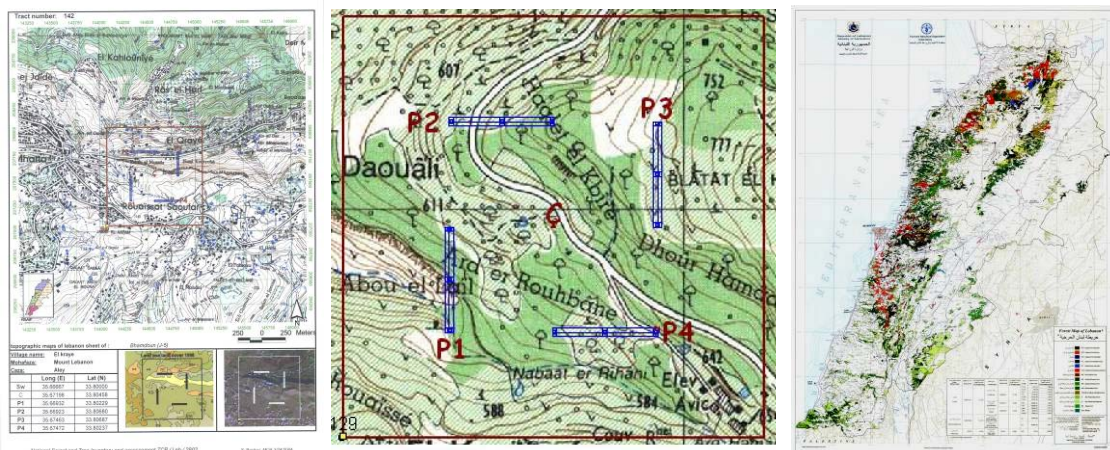
The Forest Resources Assessment project in Lebanon is part of the Global Forest Resources Assessment undertaken by the FAO. The project consists of preparing baseline data and methodology for the timber and non-timber forest resources monitoring in Lebanon. The consultancy scope was centered on the production of a forest spatial database at 1:20,000 and a forest map at 1:200,000.

### Scope

- Development of the forest legend
- Interpretation of satellite imageries in order to produce the forest spatial database in accordance with the preset legend
- Capacity building through the on the job training for the MoA staff in satellite image interpretation and use of Global Positioning Systems (GPS) and GIS
- Design and cartography of the forest hardcopy map
- Follow up on the forest map production.

### Special Features

The forest map was the first to be produced in Lebanon since 1966, however the forest spatial database was the first ever. The latter set the base line data for future monitoring and assessment of restoration/depletion of the Lebanese forests.



Field tract maps

Final forest map 1:200,000

## Beit Eddine Region Soil Mapping and Land Capability Classification

<b>Project</b>	Beit Eddine region Soil Mapping and Land Capability Classification
<b>Location</b>	Lebanon
<b>Client</b>	Atelier Yasigi
<b>Services Provided</b>	Development of geographical databases / Digital mapping and cartography Data processing and analysis / Satellite images interpretation
<b>Completion</b>	2006
<b>Cost</b>	N/A

### Synopsis

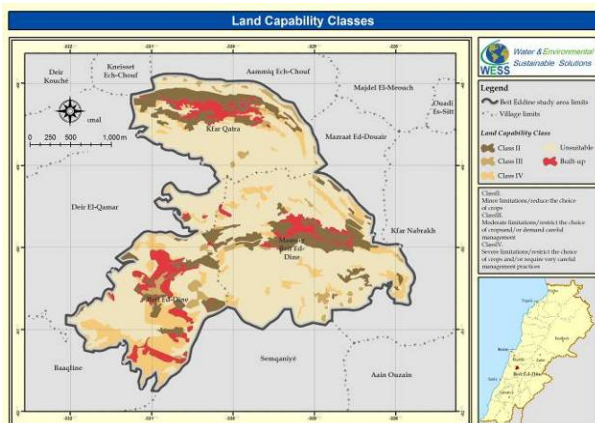
Soil and land capability maps constitute part of any master plan and they are required by the Directorate General of Urban Planning. Land capability classification assesses land capability from known relationships between the growth and management of crops and the physical characteristics of the soil and the site.

### Scope

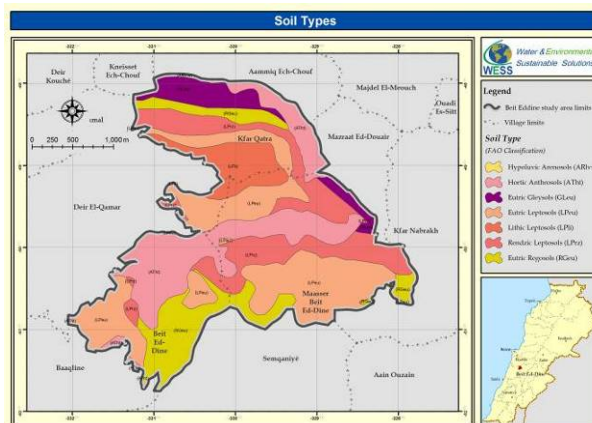
- Development of the geographic database needed for the development of the soil and land capability classes maps
- Digital processing and analysis of the data and information layers
- Interpretation of satellite imagery in order to improve land capability classification
- Design and cartography of the soil and land capability classes maps

### Special Features

The land capability classification method, which was developed by the Soil Conservation Service of the United States Department of Agriculture, assesses the degree of limitation to land use associated with land characteristics on the basis of permanent properties such as slope, soil depth, and texture, and therefore help urban and territorial planner to avoid in their master plans and designs any development in the fertile soils and reserve them for agricultural use.



Land capability classes map



Soil types map

## Development of Geographic Database for Aandqet

<b>Project</b>	Aandqet Master Plan
<b>Location</b>	Lebanon
<b>Client</b>	Dar El Handassa – Taleb and partners
<b>Services Provided</b>	Development of geographical databases / Digital mapping and cartography
<b>Completion</b>	2005
<b>Cost</b>	N/A

### Synopsis

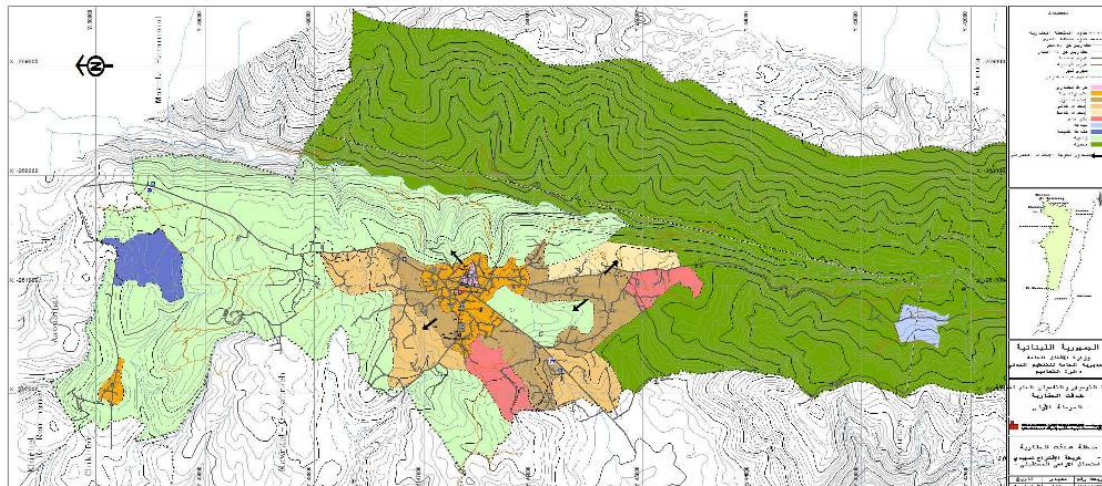
Dar El handassa – Taleb and partners was developing a master plan for the village of Aandqet in the North Lebanon, and recruited the services of Sets (WESS at the time) for the development of the need GIS spatial database (as required by the Lebanese Directorate General of Urban Planning) and mapping of the findings.

### Scope

- Development of needed GIS database
- Three dimensional visualization of the region and fly-over movie production
- Design and cartography of the needed maps

### Special Features

Development of standard geographic database for the future use of the Directorate General of Urban Planning.



Aandqet proposed master plan



## Promotion of ACSAD in pursuance of the UNCCD in the countries of the Arab League

<b>Project</b>	Promotion of ACSAD in pursuance on the UNCCD in the countries of the Arab League
<b>Location</b>	Lebanon
<b>Client</b>	GTZ (German Technical Cooperation) / ACSAD (Arab Center of Studies in Arid and Drylands) / Lebanese Ministry of Agriculture
<b>Services Provided</b>	Development of geographical databases / Digital mapping and cartography Data processing and analysis
<b>Completion</b>	2006
<b>Cost</b>	N/A

### Synopsis

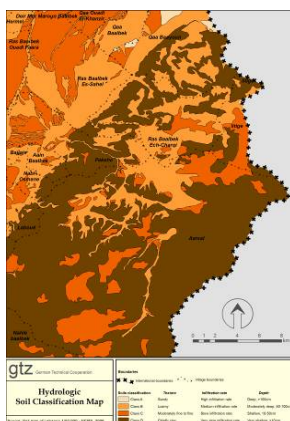
The Anti-Lebanon Mountains, is facing on a regular basis enormous physical damages, due to flush floods occurring during high intensive rainfalls events, and degrading rangelands and reducing storing capacities of surplus water, and resulting in very high run-off rates. This project, aimed at supporting the Lebanese Ministry of Agriculture to initiate and carry out a watershed management plan with emphasis on water conservation and erosion control and to develop a concept for increasing water retention capacity and reduce run-off. Sets consultancy was centered on the establishment of a digital geographic database, for the north-eastern part of Lebanon, and the initiation of a collaborative planning with the concerned municipalities as a preparatory work for a comprehensive watershed management plan.

### Scope

- Collaborative planning with concerned municipalities
- Development of the needed geographic database for the watershed management and hydrological modeling
- Integration of climatic data
- Data processing and analysis, and assist in the hydrological modeling
- Design and cartography of the needed maps

### Special Features

The project set a model and implemented the measures needed for the reduction of the run-off, erosion control and storage of storm water in the highlands of El-Qaa region.



Hydrological soil classification map



Topographic map



El Qaa major watershed map

## Environmental and Municipal GIS – Municipality of Bebnine

<b>Project</b>	Environmental and Municipal GIS – Municipality of Bebnine
<b>Location</b>	Lebanon
<b>Client</b>	AUB (American University of Beirut) / IDRC (International Development and Research Center)
<b>Services Provided</b>	Development of geographical databases / Development of customized GIS software / Digital mapping and cartography / Capacity building
<b>Completion</b>	2007
<b>Cost</b>	N/A

### Synopsis

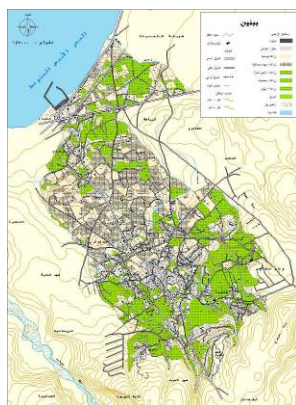
Through an IDRC fund, AUB is undertaking an environmental and health project in the disfavored region of Bebnine in North Lebanon, where it deemed necessary the enhancement of the municipal management through the use of a dedicated Geographical Information System that encompasses municipal management and environmental functions.

### Scope

- Design of the municipal management and environmental GIS software
- Development of the municipal management and environmental GIS modules
- Development of the necessary municipal and environmental geographical database
- Data processing and analysis
- Training on the use Global Positioning Systems (GPS) for field data collection
- Training on the use of the custom made municipal and environmental GIS software
- Design and cartography of the needed maps

### Special Features

The integration of the geographic and environmental dimensions in the municipal routine management.



Land cover map of Bebnine



Sample applications of the customized municipal GIS system

## National Post-Harvest Training Project

<b>Project</b>	National Post-Harvest Training Project
<b>Location</b>	Lebanon
<b>Client</b>	USAID (United States Agency for International development) / CHF (Cooperative Housing Foundation)
<b>Services Provided</b>	Sustainable agriculture / Education and training
<b>Completion</b>	2007
<b>Cost</b>	N/A

### Synopsis

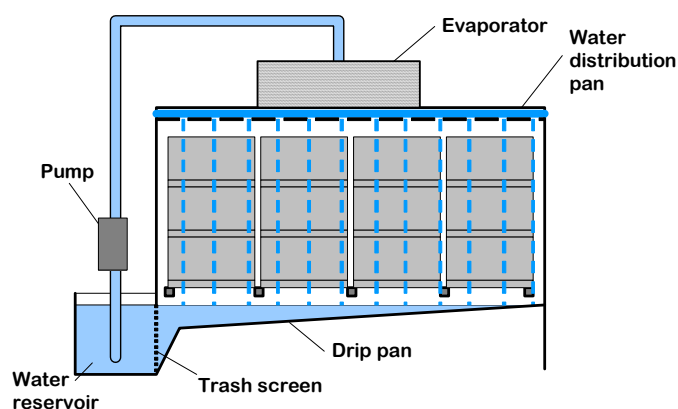
Agricultural losses that are due to postharvest handling in developing countries are estimated to totalize more than 50%. Lebanon is no exception. CHF, under cedars plus program funded by the USAID, developed this training project aiming at reducing postharvest losses and therefore increasing agricultural profitability.

### Scope

- E-learning and video conferencing
- Training of trainers (ToT) at the University of California in Davis on recent advances in postharvest handling and technologies
- Preparation of general postharvest technologies and commodity-based training packages for engineers, traders and exporters of fresh produce, and farmers
- Carrying out 24 training and extension workshops for traders and exporters of fresh produce, and farmers on the improvement of postharvest handling of different horticultural crops
- Development of 2 one-week post-harvest extension courses dedicated to agricultural engineers and extension agents

### Special Features

The project dealt with the postharvest handling and technologies in the whole supply chain, pinpointed deficiencies and trained on improving the sector.



Batch Hydrocooler



Potatoes Packaging Facility

## Vegetation and Territorial Vocation Mapping for the Qammouaa National Park, Lebanon

<b>Project</b>	Vegetation and Territorial Vocation Mapping
<b>Location</b>	Qammouaa region, Lebanon
<b>Client</b>	MADA association
<b>Services Provided</b>	GIS Mapping and Satellite Image Interpretation / Collaborative Planning / Natural Resource Management
<b>Completion</b>	2007
<b>Cost</b>	N/A

### Synopsis

The project involves designing a framework for an adapted charter for a national park in the Qammouaa region in North Lebanon, that targets conservation measures, vocation zones, as well as institutional structure for protection. It aims at building up stepping stones and drawing the path towards the creation of the national park, setting the baselines for local biodiversity conservation, as well as the promotion and support of small-scale ecotourism activities that will benefit and encourage protection activities.

### Sets' Scope

- Develop a methodology for the vegetation and territorial vocation mapping
- Build up a set of analytical GIS map
- Satellite image interpretation and mapping of the vegetation levels, series and status for the National Park in the Qammouaa Region at the scale of 1/20,000
- Participatory mapping of the territorial vocation of the region, following scientific arguments and local perception and tendencies, that defines zones and highlights priority areas for conservation, protection, agriculture, and urban development

### Special Features

The project harbours two pioneer maps:

- The first big scale (1/20,000) vegetation map including levels, series and status that has been ever developed in Lebanon
- Innovative participatory maps of territorial vocation

