***SECTION 2***

# *SYRIA: GENERAL PRESENTATION AND LEGAL FRAMEWORK*

# *SECTION SUMMARY*

**ANNEXES TO SECTION 2**

**II.1** "*State of Environment Report*", Syrian Arab Republic, UNEP 1996;

**II.2** Syrian guidelines "*Liquid wastes produced from economic-industrial activities to be sent in general sewage system; Ministry of State for the Environment, Syrian Arab Republic, 1996*";

**II.3** Syrian guidelines: Air Quality Standards, dated 1996;

**II.4** World bank Group "*Pollution Prevention and Abatement Handbook*", July 1998;

**II.5** Authorizations obtained for LAB project;

**II.6** Land ownership documentation.

## *2.1. SYRIA: GENERAL OVERVIEW*

### GEOGRAPHICAL

Located in the Middle East, Syria borders the Mediterranean Sea, between Turkey and Lebanon.

**Area**:

*total:* 185,180 sq km

*land:* 184,050 sq km

*water:* 1,130 sq km

*note:* includes 1,295 sq km of Israeli-occupied territory (Golan heights).

The terrain is mostly semiarid and desert with a narrow coastal plain and mountains in the west. Since Syria is mostly desert, its climate is hot and dry with sunny summers and mild and rainy winters along the coast. Occasionally, however, snow and sleet have been known to hit Damascus. Natural resources include petroleum, phosphates, chrome and manganese ores, asphalt, iron ore, rock salt, marble and gypsum. Syria's largest environmental concerns are deforestation, overgrazing, desertification and water pollution.

### PEOPLE

Around 16.7 million people live in Syria. Arabic is the official language while Kurdish, Armenian, Aramaic and Circassian are spoken as well. Arabs compose 90.3% of the population with the remainder being Kurdish and Armenian minorities. Sunni Islam (74%), other Islamic sects (16%), and Christianity (10%) are the nation's primary religions.


***Fig. 2.1: Syria political map***

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## GOVERNMENT

The country is officially known as the Syrian Arab Republic. Its capital, Damascus, is located in the southwestern portion of the country. Syria gained its independence from a League of Nations mandate on April 17, 1946 and ratified its constitution on March 13, 1973. The legal system is based on Islamic law and civil law system and the president is elected by popular vote for a seven-year term. Syria hosts a number of political parties including the Arab Socialist Renaissance (Ba'th) Party, the Syrian Arab Socialist Party (ASP), the Arab Socialist Union (ASU) and the Syrian Communist Party (SCP).

## ECONOMY

The GDP is in 1998 of $12.10 billion and follows: agriculture (28%), industry(14%) and services (58%).

Syrian prosperity depends heavily on oil revenues, foreign aid, remittances from Syrian workers abroad and the vagaries of agricultural production.

Up until the late 1980's, the government pursued policies aimed at expanding the public sector, virtually shutting the private sector out, except for retail trade and agricultural production. All major industry, including banking and insurance sectors, was nationalized in the 1960's. Arab aid from the "boom years" of the1970's was used to expand the state's industrial base with the creation of hundreds of public enterprises. Beginning in 1989, the government started to implement some economic reforms. It passed a new investment law in May 1991 (Investment Law, n.10), and has gradually expanded the list of goods that the private sector may produce or import, in some cases (especially textiles and pharmaceuticals) competing with government. The government continues to control all "strategic" sector such as oil production/refineries, ports, telecommunications, airlines, power generation/distribution, water bottling, banking and chemicals. There is no private sector production of passenger vehicles and imports by the private sector are very limited.

Syrian refining policy was to operate its two refineries at full capacity to maximise the production of middle distillates; however, this policy resulted in large surpluses of oil that has been difficult export because of their high-sulphur content while gasoline and

diesel oil production fell short of domestic consumption requirements. At the moment there are two refineries in Syria, at Homs and Baniyas.

### CLIMATE

The climate of Syria is generally described as Mediterranean. The country experiences two distinct seasons, winter and summer, with brief transitional spring and autumn periods. The winter season, characterized by cool temperatures and rainfall, generally lasts about four months, with the coolest temperatures and highest rainfall levels occurring in January and February. The summer season, which reaches its highest point in July and August, is characterized by high temperatures and almost a complete lack of rainfall.

Syria can be divided into several climatic regions on the basis of rainfall levels. The FAO-UNESCO Soil Map of the World, for example distinguishes the following regions: subtropical and tropical Mediterranean regions in the west, a subtropical semi-arid Mediterranean region covering the bulk of the northern part of the country and some areas to the south and west, and a large hot subtropical region covering the southeast. The rainfall levels decrease from north to south and, with the exception of the extreme northeast, from west to east. The chief influence on rainfall level is exerted by the western mountains, which catch the moisture moving off the Mediterranean Sea. These mountainous regions receive the highest levels of rainfall, followed by the coastal region. The great bulk of the country, however, is semi-arid to arid in climate, with rainfall levels under 300mm per year. The most arid section, the southeast, receives less than 100 mm of rain per year in some sections.

Rainfall levels vary from year to year and droughts leading to decrease in agricultural production are not uncommon. In the drought years of 1958, 1959 and 1960, for example, the great bulk of the country received less than 200 mm of rainfall. Temperature levels in Syria are highest in the summer season, usually reaching their peak in August. Daily temperature ranges during this season are also quite high - as much as 23 °C in the interior areas and 13 °C in the coastal region. The coldest months, December and January, usually see sub-freezing temperatures and snowfall in the mountain range of the western part of the country.

Syria experiences moist winds from the Mediterranean, which, as mentioned above, are blocked in most places from reaching the interior by the barrier of the western

mountain ranges, and dry winds from the desert regions. Vegetation-damaging sandstorms are common in the desert region, particularly in February and May.

**HUMAN HEALTH**

In Syria life expectancy at birth is:

*total population:* 68.46 years

*male:* 67.35 years

*female:* 69.64 years (2000 est.)

The infant mortality is 33 deaths for 1000 live births whereas the maternal mortality ratio is 200deaths/100,000 live births (WHO, 1999).

More details are given in section 4.2.4.4.

## *2.2 ENVIRONMENTAL PROTECTION LEGISLATION AND GUIDELINES*

### *2.2.1 Syrian environmental legislation[a]*

No central policy-formulating body has been constituted in Syrian Arab Republic (SAR) yet. Hence, environmental policy and legislation responsibilities are fragmented among various government ministries, directorates, commissions and high councils. Decision No. 163/1978 taken by the Prime Minister of SAR Government entrusts matters relating to environmental pollution to the Minister of State for Environment.

According to UNEP/ROWA Mission 1980 Report on state of the environment in SAR and draft environmental profile on SAR prepared by the Science and Technology Division, Library of Congress, Washington DC, 1981, the following legislations dealing with environment, are identified.

More recent documents, reported below, have been collected during the visit to the Ministry of State for Environment in November 2001.

#### *2.2.1.1 Water Legislation*

Under the Constitution of the Syrian Arab Republic, the principle of ownership by the people is recognized. This includes, among other things, natural resources to be exploited to the benefit of the people as a whole, but also allows for private ownership with maximum limits to be established by law. Private ownership of land and waters is governed by the Civil Code of 1949; under this Code the principle that the ownership of the soil includes in height and depth what is above and below it up to the limit required for the use of the soil is applicable. Thus, the landowner enjoys ownership rights over springs rising on and over underground water occurring under his land.

Individual laws covering water ownership and use include:

- Order-law No. 165 of 27 September 1958 on the installation of pumping equipment on public waters;
- Legislative decree No. 284 of 25 November 1960 amending Law No. 165 of 27

[a] Document "State of Environment Report", Syrian Arab Republic, UNEP 1996. See also Annex II.1

September 1958 regulating the installation of pumping equipment on public waters;

- Order-law No. 79 of 16 March 1960 making the drilling of wells subject to a prior authorization issued by the interested administrative agency;
- Law No. 3 of 13 February 1972 organizing dam operation.

It is reported that the General Directorate to Combat Water Pollution within the Ministry of Public Works and Water Resources has been seeking the issuance of unified legislation for combatting water pollution. As of mid-1977, such legislation had been completed in draft form; there is no indication that this legislation has actually been issued as law. The major legislation covering this area is Legislative Decree No. 30 on the Protection of Aquatic Life, 25 August 1964.

Chapter 6, articles 32 and 33, covers the protection of public waters. The dumping of factory and laboratory waste harmful to aquatic life and of chemical and oil waste from sewers and ships into public waters are strictly prohibited. Owners of factories and laboratories, as well as of oil tankers, pipelines and chemical substances are to "take the necessary measures to avoid damage to public waters".

Following the issuance of this decree, the construction of factories and laboratories and the laying of pipelines for oil and chemical matters close to public waters are to be subjected to authorization by the Ministry of Agriculture. The authorization is to state the measures to be taken to avoid the pollution of waters by harmful waste. Compliance is to be mandatory.

The Ministry of Agriculture is to issue orders stating general conditions for and limitations on the building of factories, the establishment of laboratories and the laying of pipelines in proximity to public waters; orders are also to state preventive measures to be taken by ships for the protection of public waters. Compliance is to be mandatory.

In 1996, for wastewaters coming from industrial activities discharging in sewage system Syrian guidelines "*Liquid wastes produced from economic-industrial activities to be sent in general sewage system; Ministry of State for the Environment, Syrian Arab Republic, 1996*" have been issued (see Annex II.2).

No specific Syrian limitations or rules for wastewaters discharging in surface waters have been identified.

#### *2.2.1.2 Soils Legislation*

No legislation dealing directly with soils or soil conservation was identified.

#### *2.2.1.3 Forests Legislations*

- Legislative Decree No. 66 of 22 September 1953, the Forest Code.

Title (1): Forests and forest products

Title (2): State forests

- exploitation of state forests;
- marketing of forest products from state forests;
- transport and storage of state forest products;
- rights to visit state forests in view of exploitation;
- usage rights in state forests;
- permits for usage rights in state forests;
- location of plants for the fumigation of tobacco.

Title (3): Woods and private forests belonging to villages, individuals and organisations

Title (4): Creation of protected zones

Title (5): On the delimitation and demarcation of private forests

Title (6): On the protection of forests

Title (7): Penalties and civil liability

- Legislative Decree No. 86 of 22 September 1953, Law on the Forest Police.
- Law No. 128 of 23 August 1958, protection of tree and plants from damage caused by goats. Each family in the western mountain region is permitted only one goat. Each village must have an appointed goatherd who carries a pass stating the number of goats in his care. Goats in excess of this number can be seized immediately by the authorities. Control of herds is assigned to the forest police.

#### *2.2.1.4 Wildlife Legislations*

- Legislative Decree No. 152, issuing the hunting regulations of 23 July 1970.

Chapter I Hunting and hunting methods

Chapter II Hunting season

Chapter III . General provisions

Chapter IV Hunting permits

Chapter V The Hunting Council (Conseil Cynegetique)

Chapter VI Secondary Hunting Councils

Chapter VII Penalties

- Legislative Decree No. 50 of 5 April 1979

This decree bans hunting for a 5-year period as a measure to preserve wildlife. Penalties include fines and prison terms of up to 2 years (MEED, 20 April 1979 p.47).

#### *2.2.1.5 Wastes legislation*

No legislation dealing directly with wastes' disposal and management was identified.

#### *2.2.1.6 Atmosphere legislation*

Actual Syrian guidelines dealing with air quality, dated 1996, give indications for several air quality parameters: limit values for different measurement time period are given (see Annex II.3)

At the moment, no Syrian laws ruling emissions in atmosphere from industrial activities have been identified.

#### *2.2.1.7 Noise legislation*

No legislation dealing directly with noise was identified.

### *2.2.2 Reference legislation and guidelines for the project*

The following laws' and guidelines' sources are both Syrian and international ones.

International references have become a necessity because of the absence of national pollutants limits.

The mean sources for international standards to refer are World Bank Group and European Community legislation.

#### *2.2.2.1 Water legislation*

On the basis of the present project (described in section 3), the wastewaters are designed to discharge in a treatment system.

Industrial waste water from companies located around Damascus are typically piped or trucked to the municipal waste water treatment plant. Daaboul LAB's original permit was based on this. Due to the amounts of waste water to be trucked (up to 15 cubicmeters per hour), the distance of the transport (30-40 kilometers), as well as the relative low contamination level of the waste water, it was in early February 2002 decided to design and build a full waste water treatment plant on-site.

The waste water treated in the on-site plant will comply with World Bank guidelines ("*Pollution Prevention and Abatement Handbook – Petrochemicals Manufacturing*", July 1998, see **Annex II.4A**) and will be used for irrigation of new green areas within Daaboul's own premises, and/or for outside irrigations projects according to permits obtained.

The design and construction of the waste water treatment plant is delayed according to the LAB plant implementation schedule and it might, in an interim period during the commissioning, be necessary to use the municipal waste water treatment system.

The reference for discharge in sewage system is the 1996 Syrian guideline *'Liquid wastes produced from economic-industrial activities to be sent in general sewage system; Ministry of State for the Environment, Syrian Arab Republic, 1996*"

In the following table parameters and corresponding limit values are reported both for discharge in public sewerage and from a waste water treatment.

| | **Maximum allowed level** (mg/l, except for pH and temperature) | |
|---|---|---|
| **Parameters** | **Syrian Guidelines** (for discharge in public sewerage) | **WorldBank Guidelines** (for discharge from a treatment plant) |
| T | 45°C | -- |
| Temperature increase | -- | ≤ 3°C |
| pH | 6.5-9.5 | 6-9 |
| S.S (suspended solids) | 5<br>10 | 30 |
| T.D.S (total dissolved salts) | 500 | -- |
| $S^{2-}$ (sulfur) | 1 | 1 |
| $SO_4^{2-}$ | 1000 | -- |
| $NH_3$ | 150 | -- |
| Nitrogen (total) | -- | 10 |
| $PO_4^{3-}$ | 60 | -- |
| Oils, grease and resins | 100 | 10 |
| As | 0.1 | -- |
| Ba | 3.0 | -- |
| B | 2.0 | -- |
| Cd | 0.5 | 0.1 |
| Cr | 5.0 | 0.1 |
| Cu | 1.0 | 0.5 |
| Pb | 5.0 | -- |
| Hg | 0.01 | -- |
| Ni | 5.0 | -- |
| Se | 10.0 | -- |
| Ag | 5.0 | -- |
| Zn | 10.0 | -- |
| $CN^-$ | 0.5 | -- |
| phenols | 0.5 | -- |
| $BOD_5$ | 1000 | 30 |
| COD | 3000 | 150 |
| T.D.S. | 2000 | -- |
| $Cl^-$ | 600 | -- |
| $F^-$ | 8 | -- |
| Pesticides | 0.005 | -- |
| Benzene | -- | 0.05 |

### *2.2.2.2 Atmosphere legislation*

The references concern both air quality ruling and emissions from combustion plants because the main emissions sources will be the ones generated from combustion site, fed with fuel oil.

**AIR QUALITY**

The Syrian guidelines for air quality, gives the following air quality standards.

| Parameter | Measure time | mg/mc (T 25°C) |
|---|---|---|
| CO | 15 min | 100 |
| | 30 min | 60 |
| | 1 h | 30 |
| | 8 h | 10 |
| O3 | 1 h | 0,15-0,2 |
| | 8 h | 0,10-0,12 |
| NO2 | 1 h | 0,4 |
| | 24 h | 0,15 |
| SO2 | 24 h | 0.125 |
| | 1 year | 0.050 |
| T.S.P. | 24 h | 0.120 |
| PM 10 | 24 h | 0.070 |
| Benzene $C_6H_6$ | 1 year | 0.010 |

The Benzene air quality target value reference is the European standard of 10 µg/m$^3$ (source: D.M. 1994 November 25$^{th}$, Italy): the air quality value is an annual average one and refers to urban areas.

**EMISSIONS IN ATMOSPHERE**

The following limits are taken from World bank Group "*Pollution Prevention and Abatement Handbook -Thermal Power: Guidelines for New Plants*", July 1998 and "*Petrochemicals Manufacturing",* July 1998*.*

The limits to be respected by liquid fuel combustion plants for energy production are the ones for heater duty less than 50 MW.

The values refer to an oxygen percentage of 3.

| **Pollutants** | **Power plants < 50MW Limit values (mg/Nmc)** | **Petrochemical plant Limit values (mg/Nmc)** |
|---|---|---|
| PM | 100 | 20 |
| $NO_X$ | 460 | 300 |
| $SO_2$ | 2000 | 500 |

#### *2.2.2.3 Noise legislation*

Noise abatement measures should achieve either the levels given in the following table or a maximum increase in background levels of 3 decibels (dB(A)). Measurements are to be taken at noise receptors located outside the project property boundary (source: *"Pollution Prevention and Abatement Handbook"* by World Bank Group, July 1998).

| **Receptor** | **Maximum allowable log equivalent (hourly measurements), in dB(A)** | |
|---|---|---|
| | Day (7.00-22.00) | Night (22.00-7.00) |
| Residential, institutional, educational | 55 | 45 |
| Industrial, commercial | 70 | 70 |

## *2.3 AUTHORIZATIONS*

### *2.3.1 Sequence of Transactions needed before issuing the building and erection license of LAB Plant*

1) Application for granting the building and erection license is submitted to the Ministry of Industry together with the feasibility study
2) The application is passed over to the Province of Damascus country where the Plant will be built
3) The Province of Damascus grants it's approval after having the approvals from the following bodies: Ministry of Environment, Directorate of Technical Services, Ministry of Agriculture, Water Authority, Ministry of Tourism, Ministry of Defence, Ministry of Industry, Ministry of Transportation and Security Authorities.
4) The application file is sent back to the Ministry of Industry
5) The latter Ministry sends the file to the higher council for investment with a motion approval
6) The higher council issues the approval and the order to include the project under Law of Investment N.10
7) The Ministry of Industry issues the industrial approval
8) Having completed the above , the request for allowing construction and erection is submitted to the Province of Damascus with the complete file of drawings
9) After the approval of the executive office, the Province of Damascus issues the requested license
10) The license is submitted to the Municipality of Deir Ali and all fees are paid
11) Upon approval of Municipal council the building license is granted
12) Building and erection start
13) Procedures follow to obtain the administrative and industrial licenses

In **Annex II.6** a copy of Land Ownership Documentation is reported.

### *2.2.3 Present project licences*[b]

The licence granted by the Head of the Supreme Council of Investment, n° 87, dated 11 June 2000 for the approval of the project under the conditions of the Law of Investments n°10, contains the following prescriptions:

- Project's object: producing alkyl benzene and heavy alkyls;
- Production capacity:

  Benzene alkyl LAB 50000 ton

  Heavy alkyles HAB 16200 tons;
- Shifts: three;
- Number of workers: 151;
- Period of execution of the project: 36 months;
- Location of the project: Damascus countryside Province;
- Data defined in the project industrial licence.

Damascus countryside Province has granted the licence, upon a temporary approval, to set up and prepare or equip the store located on the real-estate n° 851 of Deir Ali region on August the 4th 2001 after the vision of :

- The approval by Supreme Council n°87 (11/6/2000);
- The approval by Ministry of Industry n° 2258 dated 12/8/2000;
- The approval by Ministry of Environment n°1386 dated 2/5/2001;
- The approval of Deir Ali Minicipality (13/1/2001);
- The approval of the Investment Committee by the meeting n° 1156 (7/5/2001);
- The approval of Executive Office n° (13 /5/2001).

[b] See Annex II.5.