

# JOHANNESBURG SUMMIT 2002

## SYRIAN ARAB REPUBLIC



### COUNTRY PROFILE



UNITED NATIONS

## **INTRODUCTION - 2002 COUNTRY PROFILES SERIES**

Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, underscored the important role that States play in the implementation of the Agenda at the national level. It recommended that States consider preparing national reports and communicating the information therein to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront, and other environment and development issues they find relevant.

As a result, in 1993 governments began preparing national reports for submission to the CSD. After two years of following this practice, the CSD decided that a summarized version of national reports submitted thus far would be useful. Subsequently, the CSD Secretariat published the first Country Profiles series in 1997 on the occasion of the five-year review of the Earth Summit (Rio + 5). The series summarized, on a country-by-country basis, all the national reports submitted between 1994 and 1996. Each Profile covered the status of all Agenda 21 chapters.

The purpose of Country Profiles is to:

- Help countries monitor their own progress;
- Share experiences and information with others; and,
- Serve as institutional memory to track and record national actions undertaken to implement Agenda 21.

A second series of Country Profiles is being published on the occasion of the World Summit on Sustainable Development being held in Johannesburg from August 26 to September 4, 2002. Each profile covers all 40 chapters of Agenda 21, as well as those issues that have been separately addressed by the CSD since 1997, including trade, energy, transport, sustainable tourism and industry.

The 2002 Country Profiles series provides the most comprehensive overview to date of the status of implementation of Agenda 21 at the national level. Each Country Profile is based on information updated from that contained in the national reports submitted annually by governments.

Preparing national reports is often a challenging exercise. It can also be a productive and rewarding one in terms of taking stock of what has been achieved and by increasing communication, coordination and cooperation among a range of national agencies, institutions and groups. Hopefully, the information contained in this series of Country Profiles will serve as a useful tool for learning from the experience and knowledge gained by each country in its pursuit of sustainable development.

## **NOTE TO READERS**

The 2002 Country Profiles Series provides information on the implementation of Agenda 21 on a country-by-country and chapter-by-chapter basis (with the exception of chapters 1 and 23, which are preambles). Since Rio 1992, the Commission on Sustainable Development has specifically addressed other topics not included as separate chapters in Agenda 21. These issues of trade, industry, energy, transport and sustainable tourism are, therefore, treated as distinct sections in the Country Profiles. In instances where several Agenda 21 chapters are closely related, for example, chapters 20 to 22 which cover environmentally sound management of hazardous, solid and radioactive wastes, and chapters 24 to 32 which refer to strengthening of major groups, the information appears under a single heading in the Country Profile Series. Lastly, chapters 16 and 34, which deal with environmentally sound management of biotechnology, and transfer of environmentally sound technology, cooperation, capacity-building respectively, are presented together under one heading in those Country Profiles where information is relatively scarce.

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**LIST OF COMMONLY USED ACRONYMS**

|          |   |
|----------|---|
| ACS      | Association of Caribbean States   |
| AMCEN    | Africa Ministerial Conference on the Environment                                    |
| AMU      | Arab Maghreb Union  |
| APEC     | Asia-Pacific Economic Cooperation   |
| ASEAN    | Association of Southeast Asian Nations  |
| CARICOM  | The Caribbean Community and Common Market   |
| CBD      | Convention on Biological Diversity  |
| CIS      | Commonwealth of Independent States  |
| CGIAR    | Consultative Group on International Agricultural Research                           |
| CILSS    | Permanent Inter-State Committee for Drought Control in the Sahel                    |
| CITES    | Convention on International Trade in Endangered Species of Wild Fauna and Flora     |
| COMESA   | Common Market for Eastern and Southern Africa                                       |
| CSD      | Commission on Sustainable Development of the United Nations                         |
| DESA     | Department for Economic and Social Affairs  |
| ECA      | Economic Commission for Africa  |
| ECCAS    | Economic Community for Central African States                                       |
| ECE      | Economic Commission for Europe  |
| ECLAC    | Economic Commission for Latin America and the Caribbean                             |
| ECOWAS   | Economic Community of West African States   |
| EEZ      | Exclusive Economic Zone   |
| EIA      | Environmental Impact Assessment   |
| ESCAP    | Economic and Social Commission for Asia and the Pacific                             |
| ESCWA    | Economic and Social Commission for Western Asia                                     |
| EU       | European Union  |
| FAO      | Food and Agriculture Organization of the United Nations                             |
| FIDA     | Foundation for International Development Assistance                                 |
| GATT     | General Agreement on Tariffs and Trade  |
| GAW      | Global Atmosphere Watch (WMO)   |
| GEF      | Global Environment Facility   |
| GEMS     | Global Environmental Monitoring System (UNEP)                                       |
| GESAMP   | Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection |
| GHG      | Greenhouse Gas  |
| GIS      | Geographical Information Systems  |
| GLOBE    | Global Legislators Organisation for a Balanced Environment                          |
| GOS      | Global Observing System (WMO/WWW)   |
| GRID     | Global Resource Information Database  |
| HIV/AIDS | Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome                     |
| IAEA     | International Atomic Energy Agency  |
| ICSC     | International Civil Service Commission  |
| ICSU     | International Council of Scientific Unions  |
| ICT      | Information and Communication Technology  |
| ICTSD    | International Centre for Trade and Sustainable Development                          |

|        |  |
|--------|--|
| IEEA   | Integrated Environmental and Economic Accounting                     |
| IFAD   | International Fund for Agricultural Development                      |
| IFCS   | Intergovernmental Forum on Chemical Safety                           |
| IGADD  | Intergovernmental Authority on Drought and Development               |
| ILO    | International Labour Organisation                                    |
| IMF    | International Monetary Fund  |
| IMO    | International Maritime Organization                                  |
| IOC    | Intergovernmental Oceanographic Commission                           |
| IPCC   | Intergovernmental Panel on Climate Change                            |
| IPCS   | International Programme on Chemical Safety                           |
| IPM    | Integrated Pest Management   |
| IRPTC  | International Register of Potentially Toxic Chemicals                |
| ISDR   | International Strategy for Disaster Reduction                        |
| ISO    | International Organization for Standardization                       |
| ITTO   | International Tropical Timber Organization                           |
| IUCN   | International Union for Conservation of Nature and Natural Resources |
| LA21   | Local Agenda 21  |
| LDCs   | Least Developed Countries  |
| MARPOL | International Convention for the Prevention of Pollution from Ships  |
| MEAs   | Multilateral Environmental Agreements                                |
| NEAP   | National Environmental Action Plan                                   |
| NEPAD  | New Partnership for Africa's Development                             |
| NGOs   | Non-Governmental Organizations                                       |
| NSDS   | National Sustainable Development Strategies                          |
| OAS    | Organization of American States                                      |
| OAU    | Organization for African Unity                                       |
| ODA    | Official Development Assistance/Overseas Development Assistance      |
| OECD   | Organisation for Economic Co-operation and Development               |
| PPP    | Public-Private Partnership   |
| PRSP   | Poverty Reduction Strategy Papers                                    |
| SACEP  | South Asian Cooperative Environment Programme                        |
| SADC   | Southern African Development Community                               |
| SARD   | Sustainable Agriculture and Rural Development                        |
| SIDS   | Small Island Developing States                                       |
| SPREP  | South Pacific Regional Environment Programme                         |
| UN     | United Nations   |
| UNAIDS | United Nations Programme on HIV/AIDS                                 |
| UNCED  | United Nations Conference on Environment and Development             |
| UNCCD  | United Nations Convention to Combat Desertification                  |
| UNCHS  | United Nations Centre for Human Settlements (Habitat)                |
| UNCLOS | United Nations Convention on the Law of the Sea                      |
| UNCTAD | United Nations Conference on Trade and Development                   |
| UNDP   | United Nations Development Programme                                 |
| UNDRO  | Office of the United Nations Disaster Relief Coordinator             |
| UNEP   | United Nations Environment Programme                                 |

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| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change            |
| UNFF   | United Nations Forum on Forests                                  |
| UNFPA  | United Nations Population Fund                                   |
| UNHCR  | United Nations High Commissioner for Refugees                    |
| UNICEF | United Nations Children's Fund                                   |
| UNIDO  | United Nations Industrial Development Organization               |
| UNIFEM | United Nations Development Fund for Women                        |
| UNU    | United Nations University  |
| WFC    | World Food Council   |
| WHO    | World Health Organization  |
| WMO    | World Meteorological Organization                                |
| WSSD   | World Summit on Sustainable Development                          |
| WTO    | World Trade Organization   |
| WWF    | World Wildlife Fund  |
| WWW    | World Weather Watch (WMO)  |

## **CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES**

**Decision-Making:** Main responsibility is with the State Planning Commission, the Higher Planning Council in cooperation with other relevant authorities.

**Programmes and Projects:** The national environmental supporting project, the strategy project for biological diversity and its working plan, Demand Administration project of Energy and planning, Conservation Project of biological diversity in Arid Zone.

**Status:** An Environmental Planning Directorate has been established in the State Planning Commission in the year 2000 which cooperate recently with the Ministry of Environment to accomplish the project of the Environmental Protection Law.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** Planning Institution for the Economical and Social Development.

**Financing:** Governments with the cooperation of the relevant United Nations Bodies; such as UNDP.

**Cooperation:** A cooperation between the National Authorities concerned and the different International and Regional Organizations in order to protect the environment.

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**CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE  
DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC  
POLICIES - TRADE**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## CHAPTER 3: COMBATING POVERTY

**Decision-Making:** The Ministries of: Environment; Health; Social Affairs and Labour; Local Administration; Petroleum; Agriculture; Irrigation; Housing; Electricity; Economy; the Central Bureau of Statistics; and the State Planning Commission hold the main responsibility.

**Programmes and Projects:** Syria has a National Programme for combating poverty, which promotes sustainable living conditions and rural development, for establishing social and health centres, for establishing a national supporting project for handicapped and special needs, and increasing the farmer communities.

**Status:** There are a rural development centres beside the national policies in order to provide basic social services and broader socio-economic development of poor people to increase their well-being.

**Capacity-Building, Education, Training and Awareness-Raising:** The Syrian government has established centres for a specialized training for: the development of administration and production; training of qualified profession. The relevant authorities have put more efforts in having linkage between education and development.

**Information:** There is a connection between the Ministry and the Central Bureau of Statistics to collect the required data and information.

**Research and Technologies:** Universities researches, researches related to different State ministries, public organization and the Women's Union.

**Financing:** Governmental financing in addition to the International and Arab Organizations.

**Cooperation:** To achieve poverty eradication, the Syrian government efforts brought together with the international organizations such as UNICEF, UNFPA, and private sectors.

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## **CHAPTER 4: CHANGING CONSUMPTION PATTERNS**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY

**Decision-Making:** Ministries of: Electricity; and Petroleum hold the main responsibility for this issue.

**Programmes and Projects:** Extenuation the of Natural Gas instead of Liquid Fuels especially for the new thermal power plant instead of heavy Fuel Oil; Copulation of Combined Cycle Systems in the existing monocycle gas turbine power plants (Tishrin, Nasirieh and Zysoon) with the target to increase the efficiency and decrease the GHG; Conversion Baniyas Power Plant to use Natural Gas in addition to the heavy fuel oil; Conversion of Unit No.6 in Qattineh Power Plant to use Natural Gas in addition to the heavy fuel oil; Wind Farm in Sindianeh–Homs Region with Capacity around (5) M.W.; Connection of Aleppo and Baniyas Power Plants with the Syrian Gas Network.

**Status:** Using the natural gas in Tishrin, Nasirieh, Jandar, Alzara, Mehardeh, Zaysoon, Swedieh and Tayeem; Supply-Side Efficiency and Energy Conservation and Planning project which includes national programme for rational consumption and saving of the energy on the Demand Side, installation of Efficiency Monitoring System (EMS), and Maintenance Management System (MMS) in Baniyas Power Plant on the Supply Side - the project has started in 2000 and will continue till 2003.

**Capacity-Building, Education, Training and Awareness-raising:** Syrian Energy Service Centre with a target to increase the efficiency of the energy using and environment protection; Syrian Energy Research Centre specialized in the study, demand, planning and optimal economical using of all energy resources; Several Training Centres for efficiency and performance rising of electrical system and for other energy resources, which also decreases GHG.

**Information:** The information about Energy Resources, Energy Carriers, Transformation and Consumption for all Sectors, Environmental Effect in the Energy Sector is available.

**Research and Technologies:** The Technology Transfer is a responsibility of both the Ministry of Electricity, and Ministry of Petroleum and Mineral Resources, Syrian Atomic Energy Commission and scientific research centres, also there are researches and studies in several sectors. All the researches will be concentrated in the Syrian Energy Research Centre.

**Financing:** Supply-Side Efficiency and Energy conservation and Planning project financed by GEF, UNDP and OPEC; No financing for Conversion of Baniyas and Qatineh Power Plants to use Natural gas; No financing for the Wind Farm in Sindianeh–Homs Region with Capacity around (5)M.W.

**Cooperation:** The cooperation mainly with UNDP and its organizations, EU, Mediterranean countries, Arab countries, and the environmental organization in the world.

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## **CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

**Decision-Making:** Main responsibility is with the State Planning Commission and the Central Bureau of Statistics in collaboration with other relevant ministries.

**Programmes and Projects:** The National Population Policy is under preparation by the responsible authorities. This policy will take into account and the latest changes in demographic, economic, social, and environmental factors.

**Status:** The Syrian population is estimated in 2000 at 16.32 million inhabitants. The percent population of the age group between 0 –14 is calculated at 40.5%. The annual population growth rate is estimated at 2.7%. Total fertility rate is 3.7. Life expectancy for men and women is 69.6 and 71.6, respectively.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** In this area, Syria concentrates on collecting and disseminating information about population indicators and policies, as well as on balancing factors between population, the environment, available resources, and development.

**Research and Technologies:** The Population Development Centre mostly conducts research in this field.

**Financing:** Funding is provided through the Syrian government and international organizations (e.g. UNICEF and UNFPA).

**Cooperation:** Responsible authorities cooperate in this matter with UNICEF, Economic and Social Commission for Western Asia (ESCWA), and UNFPA.

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## CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

**Decision-Making:** Ministry of Health in cooperation with other relevant ministries through the Higher Health Council hold the main responsibility.

**Programmes and Projects:** Syria has some projects in the health field, such as: national vaccination project, healthy villages projects, and mental health project.

**Status:** The assessment study on the situation of health in the country which has been carried out in March 2000 under the supervision of UNFPA, showed the following results: The death rate of new born decreased 24 case/1000 new born; The death rate of children aged 5 and below decreased 29 case/1000 child; The death rate of mothers decreased to 71 case/100,000 new born; The estimated average life expectancy is 70.

**Capacity-Building, Education, Training and Awareness-Raising:** Syria established schools and specialized directorate for health management and emergencies medicine.

**Information:** All data has been computerized as a tool to develop the administrative and scientific procedures in order to have an accurate and high quality data, by using the latest high technology in communications.

**Research and Technologies:** Syria has a modern equipped centre known “Al- Assad Centre for health researches”.

**Financing:** Governmental financing, with cooperation of the private sectors and the relevant UN organizations such as: UNICEF, WHO, UNFPA, EU, Japan International Cooperation Agency (JICA).

**Cooperation:** A wide cooperation between the different concerned national sectors with the relevant International organizations.

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## CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

**Decision-Making:** Ministries of: Environment; Housing and Utilities; and Local Administration hold the main responsibility.

**Programmes and Projects:** Implementation of the Urban Development Programme for areas with low level of services and utilities. Control plan of irregular human settlements. Preparatory studies for planning in different area. Auditing of organization plans for residential expansion areas in urban, suburban, and rural areas. Studies and projects for Damascus and Aleppo old quarters that have a historic value and heritage.

**Status:** In this regard, the Syrian government is seriously concerned with making available suitable shelters for the entire population, development of human settlements administration, developing sustainable land-use practices, and building-up capacity of human settlement development. Despite the huge efforts made by the government to organize and administer the situation in major urban and suburban areas (such as Damascus and Aleppo), irregular human settlements pose a real threat to the surrounding environment and place an immense pressure on limited number of available resources. For example, supply of drinking water for major conurbation is a real problem as well as the management of resulting solid wastes.

**Capacity-Building, Education, Training and Awareness-Raising:** One of the major issues that have always been addressed is to increase the awareness and education of the rural population and promote programmes that limit the migration from rural to urban areas.

**Information:** A database system had been developed for storing and processing of data on residential areas and human settlements.

**Research and Technologies:** There are several studies and research activities on the residential situation and human settlement in Damascus and Aleppo and the impacts of irregular settlements on these two major urban areas and their limited environmental resources.

**Financing:** Funding is mainly provided by the Syrian government as well as by international organizations.

**Cooperation:** There is close cooperation in this matter with the Arab countries, UNFPA, Japan, Iran, and Turkey.

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## **CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING**

**Decision-Making:** State Planning Commission, Ministry of Environment, Higher Council for: Environment Safety and Planning in cooperation with related sectors hold the main responsibility.

**Programmes and Projects:** Fifth plan for social and economic development.

**Status:** Department for Environment Planning has been established recently in State Planning Commission for year 2000, who has set up national strategies for environmental protection and formulated a sustainable development concept in preparing plans as well as in setting up investment plan for Ministry of Environment.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** Social and economic development planning institute.

**Financing:** Local finance.

**Cooperation:** International and bilateral cooperation for development plan supporting.

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## CHAPTER 9: PROTECTION OF THE ATMOSPHERE

**Decision-Making:** Atmosphere issues are the responsibility of the following ministries: Environment; Industry; Transportation; Petroleum; Electricity; Foreign Affairs; and Interior Affairs. In addition, other governmental establishments are also involved in the process of decision-making (e.g. the Scientific Studies and Research Centre; General Directorate of Meteorology; and the Atomic Energy Commission).

**Programmes and Projects:** Syria is part to the Montreal Protocol on phasing out the ozone layer depleting substances and has been implementing projects and activities included in the Syrian programme prepared under the Protocol since 1993. In the mid 1990's, the Syrian government initiated a programme for the employment of natural gas in the industrial sector, whenever possible. This programme has been successfully implemented in electric power generation sector where it is predicted in the near future that most of the 12 power plants in Syria will be running on natural gas. Also, there is an increasing tendency at the Prime Minister Office and the relevant ministries to initiate projects for the use of compressed natural gas in the field of transportation. In 2000, the Syrian government initiated a national programme for annual vehicle emission test and maintenance. Moreover, necessary legislation has been laid down to replace old and aging cars with new ones. The General Directorate of Meteorology (GDM) is also implementing projects for the development of its national monitoring network, its services to airports, its data base system, and the Meteorology Polytechnic Institute. Syria is also completing a study on the compilation of national emission inventory of GHG and possible scenarios for projected future emissions and reduction methods. Research establishments have conducted several air quality-monitoring studies and projects (i.e., the Higher Institute of Applied Sciences and Technology, the Syrian Atomic Energy Commission, General Directorate of Meteorology, the Environmental and Scientific Research Centre) in order to assess the air quality in urban and industrial areas.

**Status:** Advanced implementation stage of the Syrian National Programme for Phasing-Out ODS. There is lack of national air pollutants emission inventories, national ambient air quality monitoring network and industrial emission measurements. The national meteorological monitoring network is old and insufficient.

**Capacity-Building, Education, Training and Awareness-Raising:** Establishment of a National Ozone Unit in 1994 within the Ministry of Environment to tackle all Montreal Protocol related activities in Syria. The Ministry of Environment, in cooperation with national and international organizations, organized several training courses, scientific workshops, awareness campaigns, and TV programmes. Also, there are limited numbers of experts, qualified personnel, and technicians working in the field of atmospheric pollution. Syria lacks a clear programme for national capacity building in the field of air pollution management, monitoring and control.

**Information:** Scientific results and reports (i.e., short-term air quality monitoring surveys, GHG emissions, ODS programme, etc.) conducted by national research organizations are disseminated to the Ministry of Environment and concerned establishments. GDM operates the national data bank on meteorological parameters. Data and information are also distributed through the production of booklets, TV and radio interviews, and articles in national newspapers.

**Research and Technologies:** Some research activities are implemented for the assessment of ambient and industrial air quality, determination of nuclear radiation levels (natural or anthropogenic) in various environmental samples and to assess their possible transfer to the food chain. There is a lack of research and development studies in the field of air pollution abatement technologies. This is mainly due to the insufficient funding allocated for this kind of research. Nevertheless, there is a limited number of research activities in meteorology, environment, and the exchange and know how technology transfer through the Montreal Protocol channels and mechanisms.

**Financing:** Syria receives financial support from the Multilateral Fund for the implementation of the Montreal Protocol. The Syrian government finances projects for the control of dust and particulate emissions from cement factories.

**Cooperation:** Syria ratified the Montreal Protocol in 1989 and the United Nations Framework Convention on Climate Change on January 6, 1996. Also, Syria cooperates in this field with various international organizations (i.e., WMO, UNEP, UNDP, JICA, GEF, and UNFCCC).

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## **CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES**

**Decision-Making:** Responsibility is with the Ministries of: Environment; Agriculture and Agricultural Reclamation; Irrigation; and Planning.

**Programmes and Projects:** Project of Environmental Survey for Natural Resources; Project of Integrated Biological Diversity Conservation; Project of Integrated Development for Water Resources in Syrian rangeland.

**Status:** The efforts continue to execute the projects of natural resources management and achieved high degree of success.

**Capacity-Building, Education, Training and Awareness-Raising:** The government has training courses for technicians.

**Information:** There is ongoing work to establish a comprehensive database.

**Research and Technologies:** To conserve the resources, cooperation is between the concerned researchers and centres.

**Financing:** Governmental and international organizations.

**Cooperation:** Sign the biological diversity conservation in 1995 and cooperate on the local, regional, and international levels to conserve the resources.

\* \* \*

## CHAPTER 11: COMBATING DEFORESTATION

**Decision-Making:** The Ministries of: Environment; Agriculture and Agricultural Reclamation; Irrigation; Local Administration; and the Higher Committee for Afforestation hold the main responsibility.

**Programmes and Projects:** There are annual program prepared by the higher Committee for Afforestation to increase the green cover (e.g. forests planning, fire control in forests, development of agriculture in south region, projects for the conservation of natural protectorates, and projects to develop forests.

**Status:** By making efforts to increase the green cover, the results show high degree of success.

**Capacity-Building, Education, Training and Awareness-Raising:** By making local and external courses.

**Information:** By creating databases. But it needs financial and technical support.

**Research and Technologies:** The agricultural researchers centre cooperate with the forests institute by using technology to search for the best information and designs.

**Financing:** Governmental and international sources.

**Cooperation:** The governmental sides cooperate with international organizations to formulate projects to execute the designs of Earth summit.

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## CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

**Decision-Making:** The Ministries of: Environment; Agriculture and Agricultural Reclamation; Irrigation; and Planning hold the main responsibility.

**Programmes and Projects:** Several projects are being undertaken such as:

- Environmental Survey for Natural Resources;
- Integrated Development for Water Resources in Syrian rangeland;
- Integrated Biological Diversity Conservation;
- The diversity conservative project and natural protected areas;
- Syria sign the international agreement for desertification combat, renewal the wells in range lands;
- Developing the Syrian rangelands;
- The green tie project; and
- Developing Al-Hamad basin project.

**Status:** The efforts continue to execute the desertification combat projects and it achieved high degree of success, and nowadays it achieved the international plan project for desertification combat.

**Capacity-Building, Education, Training and Awareness-Raising:** By local and external courses.

**Information:** The Syrian government is working on creating certain database.

**Research and Technologies:** The institutions and centres of scientific research cooperate for conservation of resources.

**Financing:** Governmental and international sides.

**Cooperation:** In 1995 Syria signed at the international convention for desertification combat. The Syrian government has cooperated with the Italian government and International Center for Agricultural Research in the Dry Areas (ICARDA).

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## CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

**Decision-Making:** Both the Ministry of Environment and the Ministry of Agriculture and Agricultural Reclamation hold the main responsibility.

**Programmes and Projects:** There are many projects that care about mountains like: Al-tilila protectorate, Al- shoh and Al- arz protectorate, Al- bala'as protectorate.

**Status:** Every year we plant great number of trees to increase the green cover and protect land. There are many rules for stone quarry.

**Capacity-Building, Education, Training and Awareness-Raising:** By training technicians for geographical information system.

**Information:** There is ongoing work to set up a comprehensive database, but it needs for financial and technical support to develop.

**Research and Technologies:** No information is available.

**Financing:** The projects financed by governmental and international sides.

**Cooperation:** The cooperation between regional and international organizations like UNDP and the Arab Center for the Studies of Arid zones and Dry lands (ACSAD).

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## CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

**Decision-Making:** The Ministries of: Environment; Agriculture and Agricultural Reclamation; and Irrigation hold the main responsibility.

**Programmes and Projects:** Project of feed circulation box support; Project of water exploitation rationalization in Syrian rangeland (AL- Badia); Development of animal production researches; researches on citrus, olives, apples; Development of Agricultural extension; Continuing classification the lands; Development of nutrient uses; Improving water resources management; Fruitful afforestation; Improving the veterinary care; Spreading and improving local caws; Bee keeping and honey production; Development of Arabic horses; and Fish wealth.

**Status:** As a result, many development projects exist.

**Capacity-Building, Education, Training and Awareness-Raising:** The Government provides training courses and local and external workshops for the technicians.

**Information:** No information available.

**Research and Technologies:** The integration of developing projects with special researches centre.

**Financing:** From Government, intergovernmental and international organizations for UN.

**Cooperation:** The cooperation projects came as national conventions like UNCCD, Bio-Diversity, UNDP, World Food Programme (WFP), FAO, and Arab Organization for Agricultural Development (AOAD), ACSAD, and also with Japan, Italy and Spain.

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## CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

**Decision-Making:** Ministries of: Environment; Agriculture; Irrigation; and Higher Education hold the main responsibility..

**Programmes and Projects:** Syria had prepared and finished these projects: National Country Study on Biodiversity 1998; Ministry of Environment in cooperation with UNEP; National Biodiversity Strategy and Action Plan 1999- Ministry of Environment in cooperation with UNDP/GEF; Agro-Biodiversity Project - Ministry of Agriculture is working with ICARDA financed by UNDP/GEF; 14 Protected areas have legislated; 35 Grazing protected areas.

**Status:** The related authorities achieve remarkable efforts to conserve and maintain the biodiversity components. The Syrian Arab Republic ratified a number of important international conventions related on conservation of biodiversity such as Convention on Biodiversity in December 1995, RAMSAR convention on Wetlands in June 1997, Convention for Combat of Desertification in July 1997, and World Heritage convention for Cultural and Natural Sites. National Biodiversity Unit (NEU) was established in 1995 within the Ministry of State Environmental Affairs.

**Capacity-Building, Education, Training and Awareness-Raising:** Through the Ministries of Environment (MSE), Agriculture (MAAR), Irrigation, Higher Education, Education, Tourism, Information, scientific centres and community-based organizations.

**Information:** National Biodiversity Unit (NBU) published National Country Study and complete biodiversity database.

**Research and Technologies:** The researches and studies carried out in the universities, scientific centres and the related ministries.

**Financing:** Both internal and external partners have sponsored activities.

**Cooperation:** Syria actively cooperates with a number of international and regional organizations such as GEF, UNDP, ICARDA, Mediterranean Action Plan (MAP), the World Conservation Union (IUCN), FAO, UNESCO, and Arab organizations (like ACSAD and AOAD).

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**CHAPTER 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTHCHNOLOGY AND  
TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY,  
COOPERATION AND CAPACITY-BUILDING**

**Decision-Making:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Programmes and Projects:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Status:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Capacity-Building, Education, Training and Awareness-Raising:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Information:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Research and Technologies:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Financing:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Cooperation:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

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## CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

**Decision-Making:** Ministry of Environment in association with Ministries of: Local Administration; Housing; Irrigation; High Education (represented through Tishreen University and affiliated Marine Research Institute); Agriculture; Tourism; Health; Industry; Transport; and Petroleum; Commissions; and scientific research centres hold the main responsibility.

**Programmes and Projects:** Hereunder the main programmes and projects already performed or under performance or planned for:

- There are planned projects of sewage treatment plants for the two coastal cities: Lattakia and Tartous. The expected cost for each is 1000 million S.P. (22 million US\$);
- A solid waste management project at local cities in Lattakia Region is in study and planning phase by JICA;
- A number of fresh water supply projects are under construction or in planning phase such as: Execution of a third pipeline to Lattakia city (almost completed);
- Plan of integrated management of the Syrian coastal region was established by Syrian experts as well as MAP/UNEP experts, since the beginning of the ninetieth. It demonstrates an integrated approach between ecological, economic and social dimensions;
- A new regulation has been issued by the Ministry of Environmental Affairs concerning the industrial development and other sectors that meet the requirement for the environmental impact assessment;
- Marine current project and coastal sea water quality monitoring programme has been running on a regular basis for quite few years covering the physical, chemical and bacteriological characteristics of seawater. This work is done by different public laboratories, such as Scientific Research Centre, Marine Research Institute, Coastal Centre of Water Pollution in collaboration with UNEP/MED-POL in Athens;
- Project of integrated management of the Syrian and Lebanese coastal regions (SMPA 1998);

There are also a number of recommended priority projects (emerging environmental issues):

1. *Quality improvement of fresh water and coastal water:* considerable effort or actions must be exercised to improve the quality of our water, such efforts include:
  - Increase of the people's awareness of our environmental problems. This will make them appreciate their surroundings and become a key factor in the projects environmental statements;
  - Better planning in laying out our industrial projects will save us a lot of environmentally adverse effects, in return it will increase our water quality. This could be achieved through a public agency similar to the US-EPA, which directs research, monitors and imposes fines on violators, and issues environmental statements and new specifications;
  - Better management of our water resources, in view of their scarcity, limitations, and our population growth. This will require better water and wastewater distribution networks, better treatment to municipal and industrial wastes, and better dumping of the sludge and solid wastes;
  - Setting up an integrated system for monitoring the sea water quality; and
  - Establishing ballast water treatment plant and wastewater treatment plants for the tourist communities;
2. *Industrial air quality improvement in the coastal region:* The hygienic effects and the economic cost of pollution resulting from the cement factory in Tartous is high, since all the surrounding areas are planted with olive trees, and the number of people affected thereby is relatively high. Considerable measures must be implemented to improve the air quality in the coastal region, such as:
  - Establishing monitoring and control centre for air quality management;
  - Establishing guidelines for ambient air quality;
  - Renewal of the electrical filters with continuous maintenance (already started);
  - Using gas instead of liquid fuel in the oil refinery and power plant in Banias;
  - Establishing new H<sub>2</sub>S treatment units instead of the old ones in the oil refinery; and

- Improving the loading / unloading processes in Tartous harbour;
3. *Urban environment improvement*: Due to the increase of illegal settlements problem in the coastal region, there are needs of plans and programmes to improve the urban environment such as:
- Adapting the principle of sustainable urban development and combat encroachment and illegal areas effectively;
  - Developing regional integrated plans for the whole coastal region and master plans for the cities and their suburbs;
  - Removing the illegal settlements in the important tourist sites; and
  - Training qualified staff to control and combat encroachment and illegal areas;

**Status:** The plan of integrated management of the Syrian coastal region demonstrates an integrated approach between ecological, economic and social dimensions. Still there is a necessity to strengthen coordination amongst the concerned parties and to follow up execution of the relevant measures within definite timetables in a short term and a long term. Most of the obstacles or weaknesses in the above mentioned programmes and projects, particularly as for effective implementation come from lack of financial support and related policy, non availability of advanced technology, and absence of legislative support or regulation related to sustainable development.

The next step to be taken to improve the planning process and its implementation in the coming 5-10 years will include the following:

1. Involvement of emerging environmental issues within specific integrated studies, action plans and applied programmes based on accurate updated information or data.
2. Establishing and accrediting environmental guidelines or standards for:
  - quality of water resources used for drinking, irrigation, industry, etc.;
  - reuse of treated wastewater for irrigation;
  - disposal of industrial wastewater discharged in sewerage networks or water resources;
  - ambient air quality;
3. Issue of legislation that regulate and control the environmental sustainability in a way that guarantees commitment to the enforced environmental standards;
4. Exploitation of the main pilot development projects in favour of social target and environmental stability; and
5. Support the Environmental Directorate in the Governorates and strengthen cooperation among related agencies.

**Capacity-Building, Education, Training and Awareness-Raising:** Current environmental education starts at the college level in different departments. The classical view of environmental engineering is that of sanitary engineering which is related to the civil engineering department. Other departments that teach classes related to the environmental sciences and engineering include: geology; chemical engineering; biology; public health; and medical school. As an example of the environmental education in Syrian coastal region, the current environmental engineering programmes at Tishreen University for both the undergraduate and the graduate levels. As for training programmes, in general they are not many as required in the coastal region. Nevertheless there are short and medium term actions and plans to promote technical capacity building and to support the Environmental Directorate in the coastal region and to increase cooperation between related agencies. In addition, there are programmes for training and public awareness campaigns including the Environmental Directorate Staff. Training courses have been established for Environmental Directorates personnel in the coastal region about the marine pollutants monitoring. Currently, there are public awareness campaigns on environment in Lattakia that started in July 2001. These campaigns cover waste separation at source, demonstration campaign at Sportive City (Al Mahabba Festival), and T.V campaign. These campaigns are sponsored by JICA, and there are considered as example of public/private/non-governmental society partnerships of highlighting public awareness regarding sustainable development in the coastal region.

**Information:** An annual report of the monitoring work on coastal and fresh waters and some pollutant levels in marine biota, is submitted to the authorities for a general pollution assessment. Other types of information concerning the drinking water are usually submitted to the authorities on a daily basis. The results of research works are published in the scientific journals, either locally or internationally. In regard to availability and quality of information at the regional or local level, there are some good data but still insufficient.

**Research and Technologies:** Two major lines of research can be identified in the research activities that are conducted at Tishreen University including the Marine Research Institute. First, research directed to adapt available technologies and apply it to the local conditions and problems; and second, research conducted to develop the technology on an international level. Samples of the current research activities at Tishreen University are listed here, some of which have already been achieved while others still in progress and they include: Study of Algae Genera Development in Oxidation Pond Systems; Ecological Assessment of Solid Waste Treatment System at Lattakia City; Use of Constructed Gravel-Bed Wetland Systems for Domestic Wastewater Treatment-Case Study in Lattakia Region; Biological and Taxonomic Study of Fish in Lattakia Coastal Water; Qualitative and Quantitative Studies of Zoobenthos in Lattakia Beach; Zooplankton in the Syrian Coastal Waters and their Culture; and Zoobenthos in Baniyas Coastal Waters and Hydrocarbon Effects.

**Financing:** Associated with the need to establish effective planning functions in the coastal region is the question of regional public finance. Central government budget resources will continue to be the main source of finance for public expenditure in the region. As new development and greater activity is emphasized in the future, more revenues should be derived by the coastal governorates from local sources (such as low rate taxes and service charges) to increase capacity for implementation of schemes to improve the environment and also to introduce standards and cost consciousness in the provision and use of services.

**Cooperation:** At national level there is some cooperation between various public establishments who are concerned with the sustainable development of the coastal region (General Establishment for Geology and Mineral Resources, General Commission for Remote Sensing, Research and Scientific Studies Centre and other establishment). At regional level, unfortunately, the cooperation is weak even though we have a common interest concerning the quality of environment. Concerning the international, so far we coordinated some research activities with some international organizations such as: UNEP, MAP, FAO, GTZ, WHO, UNESCO.

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## **CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROCHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES**

**Decision-Making:** The Ministries of: Environment; Housing and Utilities; Irrigation; and Agriculture hold the main responsibility.

**Programmes and Projects:** Sixty four major projects are implemented by the Syrian government amongst which are: the construction of new water dams; agrarian reforming of land; application of modern irrigation systems; rehabilitation of old projects; establishment of a new scientific centre for water researches; implementation of the national strategy plan for water resources; and the creation of protection zones for drinking water resources. Moreover, several new water distribution networks and pumping stations have been constructed in various parts of the country. In addition, large wastewater treatment plants are built for major cities in Syria (some are in operation and others are still under construction). Also, there are plans for the establishment of national industrial treatment programme and for drawing surplus water from the coastal region to Damascus and its rural areas. The responsible authorities have also prepared water legislation law, though it is still under consideration. A new project is being proposed for the establishment of National Analytical Quality Programme for water analysis.

**Status:** It should be noted that, sources of water pollution originating from the unregulated discharge of industry, agriculture, and public sewage are not yet fully controlled. This requires more efforts in order to protect water resources from pollution and to improve water quality. Nevertheless, a noticeable increase has been observed in the number of irrigated areas and reformed lands, number of water dams, and in the utilization of ground water. A database and network for water resources in the seven water basins has been established in Syria. The responsible laboratories within the Ministry of Irrigation and the Ministry of Housing and Utilities are continuously monitoring basic water quality parameters. As for the monitoring of toxic micro pollutants (i.e., heavy metals, pesticides, polycyclic aromatic hydrocarbons (PAH), and halomethanes), they are analysed on yearly basis by the Environmental Research Laboratory at the Higher Institute of Applied Sciences and Technology (HIAST). Currently, several water distribution networks are being renewed to minimize losses from old networks. However, it should be noted that a great deal of works and efforts are still needed to solve the current and future problems of water shortage in major conurbation such as Greater Damascus and its rural areas. Most importantly, is to finalize and complete the agreement between Syria, Iraq, and Turkey, which would regulate the use of international rivers in a fair and agreeable manner to all concerned parties.

**Capacity-Building, Education, Training and Awareness-Raising:** Syria makes a good use of the limited number of aids offered by international funding organizations. Training of technical staff is achieved through the participation in training courses and workshops conducted on the national, regional, and international levels. All kinds of media (i.e., television, radio, and newspapers) are frequently employed to increase public awareness on the importance of water issue and the rational use of limited water resources.

**Information:** The Ministry of Irrigation initiated a programme to achieve automation of its work and data flow. Also, a comprehensive study has been completed to establish a water data bank and a network for all water resources. Geographical Information Systems have also been employed in the field of water management and national and regional planning of water resources.

**Research and Technologies:** Establishment of a new centre for water research. Construction of new buildings and laboratories and providing research staff. Research on the application of modern irrigation techniques, and design of modern dams and hydroelectric power generation. Currently, HIAST are working with relevant ministries on introducing water desalination techniques to Syria. Moreover, the Environmental Research Laboratory at HIAST had produced over 35 studies on water pollution issues, the quality of drinking water resources, and wastewater treatment.

**Financing:** Funding is mainly provided by the Syrian government and has remarkably increased throughout the past 30 years. In addition, several projects are partially or fully financed by international funding organizations (such as; the World Bank, Islamic Bank, FAO, JICA, GTZ, etc.).

**Cooperation:** Relevant ministries and governmental institutes responsible for water issues in Syria are cooperating with different international organizations in the field of water policy planning and the implementation of international conventions. Also, Syria had convened several agreements with Turkey regarding the two international rivers Euphrates and Dajleh.

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## **CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS**

**Decision-Making:** The Ministries of: Environment; Agriculture; Health; scientific research centres; Atomic Energy Commission; Custom; and Local Administration hold the main responsibility.

**Programmes and Projects:** Recently a preparation of the national program on chemical safety has been carried out. Another project under preparation phase concerning the management of major organic pollutants and contaminants of the environment has to be carried out in cooperation with the United Nations Development Programme.

**Status:** The Ministry of Environment has a specialized Committee concerned with the chemical safety (assessment and management). Its members are from all the relevant national institutions in the country.

**Capacity-Building, Education, Training and Awareness-Raising:** Guidance achieved through the national broadcasting media and the local specialized training courses in order to strengthening risk assessment capabilities to minimize risk resulted from handling and use of toxic and hazardous chemicals. Syria concentrates on securing the information and building experience, and getting benefits from UN organizations and through regional and international cooperation in addition to building up human and institutional capacity through technical help from related sectors and participating in the program of hazardous waste prevention.

**Information:** No information available.

**Research and Technologies:** Some scientific studies on the residual effects of toxic pesticides in the living media. A survey has been carried out to measure the concentration of PCBs in some samples of the environmental media, and of heavy materials in blood of workers, policemen, students, etc.

**Financing:** Governmental and through the relevant international organizations.

**Cooperation:** Collaboration between UNEP, ILO, IPCS, United Nations Institute for Training and Research (UNITAR) and other international organizations and programmes.

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## CHAPTER 20 TO 22: ENVIRONMENTALY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES

### Decision-Making:

*Hazardous wastes:* The Ministries of: Environment; Agriculture; Health; Industry; Economic; scientific research centres; Atomic Energy Commission; Custom; and Local administration hold the main responsibility.

*Solid wastes:* The Ministries of: Environment; Health; Tourism; scientific research centres; and Local Administration hold the main responsibility.

*Radioactive wastes:* The Atomic Energy Commission of Syria, the Ministries of: Environment; Health; Industry; and the scientific research centres hold the main responsibility.

### Programmes and Projects:

*Hazardous wastes:* Management of medical wastes project.

*Solid wastes:* Management of solid wastes project.

*Radioactive wastes:* Syria has its national legislation infrastructure and its regulation for controlling all radioactive materials, including radioactive wastes. The Atomic Energy Commission of Syria (AECS) is the national body responsible of implementing such regulations and standards. Strict control of radioactive wastes is needed to prevent any accidental environmental releases and exposure of the population.

### Status:

*Hazardous wastes:* The National Project for Administration of Medical Wastes has been carried out in Syria. Syrian government prevents any transboundary movements of hazardous wastes, consistent with the environmentally sound and efficient management of those wastes. Any illicit trafficking considered as a murder action, and the national law punished that action. No illicit trafficking has been occurred or recorded in the country. Syria is suffering from an accumulation quantity of 230 tones of expired pesticides that need to be handled as hazardous wastes.

*Solid wastes:* Different national projects have been carried-out in order to reduce, and manage the handling of solid wastes.

*Radioactive wastes:* A limited quantities of radioactive wastes present in Syria as a result of extended development in the field peaceful use of radioisotope in the fields of agriculture, industry, medicine and scientific research. Syria has no radioactive wastes resulted from nuclear-fuel cycle. Syria based on its handling with radioactive wastes on the International Atomic Energy Commission Regulations and Standards. AECS is discharging its duties effectively by strengthening its capabilities for handling, treatment, storage, disposal and monitoring of low-and intermediate-level radioactive wastes.

### Capacity-Building, Education, Training and Awareness-Raising:

*Hazardous wastes:* Environmental awareness is promoted through broadcasting media which play a main role in educating people, as well as through specialized training courses.

*Solid wastes:* The concerned authorities in Syria have special training programmes for administration and handling of solid wastes.

*Radioactive wastes:* Syria aims also to strengthen the capabilities of the technical staff in the operation and development of waste treatment and disposal repository systems. The concerned staff in the AECS trained in developing countries in the field of all aspects of waste management.

### Information:

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* Nine specialized radioactive monitoring centres where established on the main boarder entrance to Syria. Those centres are very well equipped and supervised by well-qualified and trained staff members.

### Research and Technologies:

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* Syria carried out some specific projects under the supervision of the International Atomic Energy Agency to find out the most suitable procedures for managing and handling of radioactive wastes resulted from oil industrial applications.

**Financing:**

*Hazardous wastes:* Governmental and through the relevant international organizations.

*Solid wastes:* Governmental and through the relevant international organizations.

*Radioactive wastes:* Syrian government provide AECS all the required buildings and covered all the operational costs. While all equipments, instruments and the international staff training were covered by the technical cooperation of the International Atomic Energy Agency in Vienna.

**Cooperation:**

*Hazardous wastes:* The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was signed by Syria in 1989 and ratified in 1991. In addition to the cooperation with the plan of decontamination of the Mediterranean Sea on the regional level and on the Arab level, there is cooperation in the field of hazardous wastes with the Arab Centre for Training and Transfer of Technology that relates to Basel Convention.

*Solid wastes:* A wide cooperation programme between the Ministry of Environment and all the other relevant ministries with the international and foreign agencies such as the Japan International Cooperation Agency, The German Cooperation Agency and the Technical Cooperation Programmes in the Mediterranean Sea Region.

*Radioactive wastes:* There is a wide positive cooperation between all the concerned national authorities with the international organizations and agencies.

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## CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

**Women:** Women in Syria have a main role through women union, which has many activities about environmental awareness-raising to improve the awareness in both women and children.

**Children and Youth:** Decision-making: In the strategy of the Ministry of Environment, there is a plan to build their capacity and use it as much as possible in raising public awareness and sharing in minimizing negative impacts on the environment. The Union also established a Friend of the Environment Community in 1997. The goal set in Agenda 21 of ensuring that by year 2000 more than 50% of youth -- gender balanced -- have access to appropriate secondary education or vocational training. The role of children and youth in the national Agenda 21 process is advisory and on an ad hoc basis. Status: In Syria, there are about 1.25 million youths organized in Thoura Youth Union.

**Indigenous People:** Decision-making: In Syria, indigenous people are involved in decision-making through local administration: they have representatives in the Executive Councils of the Governorates. They also act as advisers in national policies on ad hoc basis and are fully involved in resource management strategies and programmes at the national and local level.

**Non-Governmental Organizations:** Decision-making: Mechanisms already exist, and inputs from NGOs such as union organizations, vocational syndicates, and associations are considered important in the conception, establishment and evaluation of official mechanisms to review Agenda 21 implementation.

**Local Authorities:** Decision-making: The Government supports local agenda 21 initiatives. Youth and women's unions are represented in the Consultative Committee set up for implementing Agenda 21 in Syria.

**Business and Industry:** Decision-making: Main responsibility is with Ministry of Environment in cooperation with Ministry of industry and chambers of industry. Programmes and Projects: There are governmental policies both encouraging the re-use and reduction of waste per unit and requiring recycling.

**Scientific and Technological Community:** Decision-making: The scientific community has already established ways in which to address the general public and deal with sustainable development. In addition Geographic and Damascus' friends Associations had been established.

**Farmers:** Capacity-Building, Education, Training and Awareness-Raising: There are plans to increase farmers' awareness and participation through farmers' unions. Particular attention will be paid to the ways in which pesticides and fertilizers are used and to protecting natural resources by using efficient irrigation systems.

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## CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

**Decision-Making:** There is environment cooperation between different sectors, as Ministry of Environment sharing the economic and technical phases. The aim of the strategy of Ministry of Environment is to achieve sustainable development and support all environment conventions, specially concerning natural resources.

**Programmes and Projects:** Many projects are executed by international organizations: Solid Waste Management in the main cities (Aleppo, Homs, Lattakia, Tartous, Baniyas); Arz and Shouh protected area development project; Using new technologies on cars project (transferring into gaze); replacing the depleted industries for ozone layer.

**Status:** Develop the Environment Quality in Syria through applying environmental Impact Assessment process in all activities, as the Ministry of Environment has recently set up National Environment Action Plan (NEAP) and Basins Environment Action Plan (BEAP).

**Capacity-Building, Education, Training and Awareness-Raising:** Existing national action plan for capacity building through implementing strengthening national capacity for environment affaires in Syria.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** Cooperation with EU for building capacity in the regional directorates, as well as cooperation with all international donors, as in September 2001 a donors meeting will be held.

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## CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

**Decision-Making:** Ministry of Environment in association with Ministries of: High Education; Education; Agriculture; Irrigation; and Industry; in addition to scientific research centres, institution and commissions hold the main responsibility. The decision-making parties regarding science for sustainable development are far from integration and coordination.

**Programmes and Projects:** The Syrian government has various projects and programmes which include:

(1) Establishing Syrian Higher Education Research Network (SHERN project) between the Ministry of High Education and the different universities in Syria; (2) Research work has been achieved by universities and research centres and commissions in evaluating the natural systems in Syria such as biodiversity, the agro-ecosystem and aquatic ecosystem; (3) Improving the scientific infrastructures in schools, universities, research centres and commissions (such as supply of adequate scientific equipment, access to current scientific literature) in spite of a need to develop and expand national scientific and technological database and to process those data in unified formats and systems; (4) Educational and training programmes performed occasionally. Currently there is a national tendency towards up-dating the knowledge and information of scientists, engineers and technicians, but still there is lack in developing specialist capable of better working in inter- and multi-disciplinary programmes related to environmental development.

**Status:** Syria has about 5000 professors and lecturers engaged in research, teaching and experiment development. Part of which is engaged in the research activities of environment and development, which are mainly conducted at universities and research centres and commissions. Some of these research works are published in the refereed journals issued locally or internationally. Higher council of science in Syria holds annually science week in which various topics on development and environment are handled. This council also holds several works shops, seminars in this respect. Furthermore, there are many specific centres, labs and various research centres affiliated with the Syrian universities, connected to World Wide Web. At present, there is a tendency towards increasing the research output in order to enhance understanding and facilitate interaction between science and society, and consequently to increase the projected scientific capacity and capability.

**Capacity-Building, Education, Training and Awareness-Raising:** *School Activities:* The pioneer organization was established in the 70's with the aims to promote environmental conscience among young pupil. The activities of this organization include children's seminars, tree planting in camps and schools and other activities to convey the message of sustainable development. Environment is being taught within the curriculum at schools.

*University Education Programmes:* There are good numbers of courses dealing with environmental education at university levels. At the same time, there are graduate study programmes (diploma, master, doctorate) at different departments leading to higher degrees in environmental engineering; aquatic environment; and soil and agronomy. We recommend establishing a centre of excellence in environmental sustainability. As for training programmes, in general they are not many as required. Nevertheless there are short and medium term actions and plans to promote technical capacity building and to support the environmental Directorates and other concerned Directorates through universities.

**Information:** In regard to availability and quality of information at the local or national level, there are some good data but still insufficient.

**Research and Technologies:** Research is done mainly by the universities in Syria and research centres and commissions and in the year 2000. 250 million s.p. was earmarked for scientific research at universities. Some of this budget has been paid for the promotion of sustainable development and for preventing environmental degradation. Numerous research works have been performed and published in the field of biodiversity, wastewater treatment, solid waste management, fish taxonomy and biology, aquatic ecosystem, etc. The main obstacle here towards further extension in researches is the weak budget accredited from the government in comparison with developed countries.

**Financing:** Most of the research works and scientific infrastructures in schools, universities, research centres, institutions and commissions are financed locally, mainly by the central government budget resources, sometimes by international specific organizations such as UNDP, UNEP, UNESCO, WHO, International Development Research Centre (IDRC), etc.

**Cooperation:** At national level, there is some cooperation between the researchers of universities and research centres, institutions and commissions. .At regional level, unfortunately, the cooperation is still weak. Concerning the international level, there is certain coordination for research activities with some international organizations such as UNEP, FAO, WHO, UNESCO, ICARDA, ACSAD.

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## **CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING**

**Decision-Making:** Ministry of Environment in cooperation with Ministries of: Media; Education; Higher Education; and Culture hold the main responsibility.

**Programmes and Projects:** Environment education has applied in schools' curricula and raising the public environment-awareness through media.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** Locally from related ministries' funds, and internationally from organizations such as Technical Cooperation Agency (GTZ) (Germany), UNDP, and UNEP.

**Cooperation:** Existing cooperation between sectors concerning environment education, training, and awareness, as well as the international cooperation with concerned organizations.

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## **CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES**

This issue has been covered either under Chapter 2 or under the heading **Cooperation** in the various chapters of this Profile.

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## CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

Over the past few decades, the UN system has been providing assistance to the Syrian Arab Republic through its various agencies, including: UNDP, UNFPA, WFP, UNICEF, United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), UNHCR, and FAO as well as the two peace keeping bodies United Nations Disengagement Observer Force (UNDOF) and United Nations Truce Supervision Organization (UNTSO). The programmes of these agencies have aimed at supporting development projects in various sectors, the most important of which are: agriculture, industry, health, environment, trade and transfer of technology, and population. All those programmes have had significant impacts on the social and economic development process.

In the sector of agriculture and irrigation, the UN programmes covered a number of fields, including: management of water resources, introduction of new irrigation technologies, biological control, conservation of biodiversity, development of agricultural species, combating desertification, in addition to the implementation of rural community development interventions in the southern region of Syria and in Jabal Al Huss region whose inhabitants are among the poorest and most disadvantaged in the whole country.

In the industrial sector, the UN specialized programmes covered activities such as ISO 9000, computerized management systems, and the establishment of a centre of textile in the development.

In the health sector, the UN programmes covered activities such as: primary health care, child and mother health care, health education, reproductive health, prevention of some diseases and epidemics, and healthy villages programmes which have provided basic services to rural populations (including immunization, family planning, community schools, etc.)

With respect to the social aspects, the UN specialized programmes included a number of activities to support national efforts aiming at women's empowerment and involvement in the development process, child rights and well being, and the rehabilitation of the handicapped and their integration in the society. The UN agencies have also devoted a significant part of their activities to develop human resources through strengthening national capacities by providing training, introducing information systems at the early stages of education, developing vocational and technical training in addition to other programmes aiming at transfer of technology.

While the protection of the environment is a cross-cutting component in all the aforementioned sectors, various UN programmes lead by UNDP have particularly focused on this area as an end by itself. Among the most important programmes in this sector was the assistance provided by UNDP to Syrian Government Affairs in the formulation of a National Environmental Action Plan to serve as Syria's local Agenda 21. Furthermore, the attempt to assist the government in meeting its obligations towards various environmental conventions (Montreal Protocol, Climate Change Convention, Convention to Combat Desertification, Convention on biodiversity) to which Syria has previously ratified through the implementation of a number of national programmes is another example of the support provided in this sector.

In line with the commitment of the UN system globally to bring greater coherence to the UN programmes of assistance at the Country level, the UN Country Team in Syria is currently in the process of formulating a United Nations Development Assistance framework (UNDAF). The two broad goals of the UNDAF in Syria are: to improve living standards of the Syrian population and to strengthen national institutional capacities to meet development challenges.

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## **CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS**

This issue has been covered under **Cooperation** in the various chapters of this Profile.

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## **CHAPTER 40: INFORMATION FOR DECISION-MAKING**

This issue has been covered either under Chapter 8 or under the heading **Decision-Making** in the various chapters of this Profile.

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## CHAPTER: INDUSTRY

**Decision-Making:** Ministry of Industry in collaboration with Ministries of: Environment; State Planning Commission; Finance; and Economy hold the main responsibility.

**Programmes and Projects:** The Ministry of Industry operates several major industrial establishments for the production of petroleum derivatives, fertilizers, and Portland cements. New projects are planned for steel and aluminium production, lead smelters, and for the production of phosphate and ammonia urea fertilizers. The Ministry of Industry is also funding a project for the installation of electrostatic precipitators and dust capturing devices for cement plants in order to reduce dust emissions to the surrounding environment.

**Status:** Industrial activities operated by both private and public sectors in major conurbation (such as Damascus, Aleppo, Homs, Tartous, and Baniyas) are responsible to some extent for the degradation of the quality of watercourses, ground water, and the surrounding environment. This is mainly due to the lack of sufficient funding to install treatment technologies before discharging polluted effluents to the environment. Nevertheless, the Ministry of Industry in co-operation with the relevant ministries and a team of experts is currently preparing the National Limitation Standards for Industrial Effluents Discharge to watercourses or public sewers. Currently, the Ministry of Industry and the Ministry of Environment are enforcing the implementation of environmental impact assessment system (EIA) for new industrial projects or activities before granting the license. The Syrian government is taking the necessary measures to overcome obstacles that face the improvement and modernization of the industrial sector in Syria. Opening the doors and encouraging foreign investment through the Syrian Law No. 10, the Euro-Mediterranean partnership project, WTO, and the establishment of free trade market amongst interested Arab countries are achieving this.

**Capacity-Building, Education, Training and Awareness-Raising:** The Ministry of Industry increases the awareness and capabilities of its technical and management staff by organizing dedicated courses at the Management Development and Production Centre, workshops organized in cooperation with the Chambers of Industry and Commerce, and through the participation in training courses abroad the country.

**Information:** The Ministry of Industry has its database for data storage and dissemination and for the exchange of information.

**Research and Technologies:** The Ministry of Industry in cooperation with research institutes conducts development studies to improve the efficiencies of its production lines and for the introduction of new technologies. In addition, the Environmental Research Laboratory (ERL) at HIAST conducted several field studies for the assessment of workers exposure in cement factories and oil refineries, and for the determination of pollutants emission rates and removal efficiencies of pollution treatment units. Currently, research work is undertaken by ERL at HIAST to develop appropriate methods for the treatment of olive mill wastewater.

**Financing:** Funding is provided through the Syrian government and international aids.

**Cooperation:** The Ministry of Industry cooperates with all relevant ministries and international organizations.

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## **CHAPTER: SUSTAINABLE TOURISM**

**Decision Making:** Ministry of Environment in cooperation with Ministries of: Tourism; and Agriculture hold the main responsibility.

**Programmes and Projects:** A new department for environmental tourism has been established which seeks to achieve sustainable tourism development for natural resources protection and tourist, in addition to many projects for achieving environmental tourism such as, Arz and Shouh protected area development.

**Status:** The new department is not sufficient effective yet.

**Capacity-Building, Education, Training and Awareness-Raising:** The tasks of environment tourism department are to build capacity and participate in all conferences and seminars, workshops, concerning environmental tourism, in addition to raising environmental awareness through the related sectors.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** Besides to local cooperation, the department seeks for international cooperation to be more effective.

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