

JOHANNESBURG SUMMIT 2002

ISRAEL



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

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: The Center for International Cooperation (MASHAV) in the Ministry of Foreign Affairs is responsible for designing, coordinating and implementing Israel's international development cooperation programmes, especially with "less developed countries." With regard to sustainable development, MASHAV coordinates its efforts with relevant agencies: the Ministry of the Environment on matters related to combating pollution and resources conservation, the Ministry of Agriculture on development of sustainable agriculture and sustainable water resource management, the Ministry of Housing on habitat-related matters, as well as the Ministry of National infrastructures, the Ministry of Science, the Ministry of Education and other government agencies. MASHAV coordinates Israeli policy on cooperation/development for sustainable development. Authority for decision making on international cooperation and sustainable development is at the national level. Some cooperation exists at the local level, in the framework of sister towns. There are no specific laws or regulations related to cooperation for sustainable development at sub-regional, regional and international levels nor foreign policy regulations or directives related to Agenda 21. However, the process of formulating a draft sustainable development strategy for Israel was influenced by international, regional and sub-regional factors, including Agenda 21 and Agenda Med 21. In November 1999, the government decided to establish a National Council for the Environment. The Council, founded in September 2000, will advise the parliament and the government on environmental planning and on sustainable development issues, including international and regional cooperation. Israeli policy on regional cooperation in sustainable development is largely based on cooperation within the framework of the Mediterranean Commission on Sustainable Development. Within this framework and within the framework of the Mediterranean Action Plan, in particular, Israel cooperates with other Mediterranean states. Multilateral cooperation and agreements are undertaken within the framework of international conventions on the environment, programmes by United Nations agencies, and bilateral agreements for environmental cooperation with numerous states including the USA, Germany, Egypt, Spain, Turkey, England and others. In addition, MASHAV's international cooperation programme reflects the goals set forth in the Global Initiative on Sustainable Development. The major groups included in decision-making processes on international and regional cooperation for sustainable development include the scientific and technological community and NGOs. All of MASHAV's activities are carried out in cooperation with relevant government ministries, universities, research institutions and professional bodies. The advent of the Middle East peace process has witnessed the emergence of several new non-governmental organizations committed to promoting regional cooperation for environmental protection and sustainable development. They include Friends of the Earth Middle East, composed of Israelis, Palestinians, Jordanians and Egyptians, involved in projects related to sustainable tourism development, renewable energy and the impacts of transboundary pollution. The Palestinian-Israeli Environmental Secretariat is another NGO promoting cooperation on environmental concerns. MASHAV carries out its mandate with the assistance of affiliated study centers, academic and professional institutions and experts in various fields from different sectors.

Programmes and Projects: The Coastal Area Management Programme for Israel, within the framework of the Mediterranean Action Plan of the United Nations Environment Programme (UNEP), completed in 1999 had the following objectives: to encourage policy makers of economic development sectors to take responsibility for the environmental impact of their decision and to incorporate environmental considerations in their decision-making processes related to sustainable development, capacity building, economic instruments; and to improve the professional basis for policy making on issues not sufficiently covered in current coastal zone management (e.g. pollution control, beach erosion, cliff stability, climate change, biodiversity). Several Israeli projects were also financed by the European Union, within the framework of its LIFE II programmes. These related to the restoration and conservation of fauna and flora, centralized treatment of organic waste, restoration of coastal rivers, municipal solid waste management and protection of endangered birds. Several projects have focused on the eradication of poverty, especially through courses on Community Development and Income Generation with modules on Grassroots Management Training. Special emphasis is placed on working with poor women in Africa to help them manage projects, groups and businesses more efficiently and profitably.

Status: Israel's development assistance is largely provided in the form of training, both in Israel and abroad, and consultancies. However, emergency relief is also an important part of international cooperation. Emergency aid assistance is extended to countries throughout the world whose populations are victims of natural disasters such as earthquakes or hurricanes. Such aid may take the form of financial assistance for the purchase of medical equipment, food supplies, tents and blankets or in the form of expert missions, usually medical experts, to provide high-level assistance to neighboring countries. Issues such as public transport, public awareness and involvement in sustainable development policy, sustainable cities and sustainable tourism require most immediate attention for bilateral or multilateral cooperation. Other essential issues relate to water use and development and protection of biodiversity and endangered species. Major challenges include raising awareness of international concepts of sustainable development in all sectors and at all levels, including the local level, and finding ways of building up confidence and trust between various partners in order to allow for the presentation of interests clearly with the aim of promoting cooperation in sustainable development.

Capacity-Building, Education, Training and Awareness-Raising: Education, training and access to information are major elements of MASHAV work in cooperation with other governments and UN agencies. Israel has developed courses for training hundreds of education professionals from around the world, who have returned to their countries to make tangible progress in their own states. A major focus of activity is early childhood education. The Ofri International Study Center was established as a MASHAV extension, in cooperation with the Israel Ministry of Education. It concentrates on educational fields that contribute to human resource development and regional upbuilding. Three main fields of activities were designed: education, technology and science, education and community and adult education. MASHAV training courses offered in 2000 include education for science and technology, computerization of social systems, community education and media strategies for community development. One of MASHAV's main branches is its Cooperative Development Programme which aims to train professionals in new ways to enhance their society's economy and policy-making. Some 60 Israeli schools take part in the Global Learning and Observations to Benefit the Environment (GLOBE) project. The programme focuses on global environmental issues and utilizes the Internet for information sharing. The development of the peace process in recent years has helped raise awareness of the importance of regional and international cooperation for sustainable development. NGOs such as Friends of the Earth Middle East foster public awareness of regional cooperation for sustainable development through publications, campaigns and the Internet.

Information: The Act of Freedom of Information was enacted in 1999. According to the Act, any person who is a resident of Israel is entitled to receive information from governmental authorities (except for trade secrets or security matters). Information related to trade, investment and economic growth is accessible to potential users through different mediums, such as formal publications and on the internet. Information on international conferences and conventions is published by the Ministry of the Environment and international cooperation issues are also featured on the websites of the Ministry of the Environment and the Ministry of Foreign Affairs.

Research and Technologies: The Chief Scientist Office in the Ministry of Industry and Trade regulates the flow of technology on research and development projects supported by this office. Organizations such as the Israel Export Institute facilitate strategic alliances and promotion of environmentally sound technologies through international cooperation. Experts from Israel cooperate with experts in other countries in joint research in several fields linked to sustainable development. These include development of environmental indicators for the Mediterranean region, integrated pest management, combating desertification, water management, sustainable industry and development of alternative sources of energy. This joint research is based on exchange of information and exchange of experts. Professional networking is ongoing between experts in Israel and those outside. Programmes in research are conducted under the auspices of MASHAV, including joint research of institutions in Israel and with institutions in developing countries.

Financing: The majority of funds are allocated to capacity building and poverty eradication. See also under Cooperation.

Cooperation: MASHAV has signed agreements on technical cooperation with the USA, The Netherlands, Denmark, Sweden, Norway and Germany, under which Overseas Development Agencies of these countries share

with MASHAV the cost of specified MASHAV activities. Agreements also exist with international organizations involved in technical cooperation activities in developing countries such as FAO, UNDP, UNESCO, WHO, EDI (World Bank), The Organization of American States (OAS) and the Interamerican Development Bank (IDB). Some have signed programmes of cooperation with Israel under which these organizations sponsor fellowships for professionals throughout the developing world to study in MASHAV courses in Israel or fund Israeli experts to serve as consultants to developing countries in different subjects. MASHAV itself funds numerous training programmes and courses in Israel and abroad. International development programmes coordinated by MASHAV are carried out in 140 different countries/authorities in Africa, Asia and Oceania, Latin America and the Caribbean, Central and Eastern Europe and the Commonwealth of Independent States, the Middle East and North Africa and Europe. MASHAV has entered into international cooperation agreements, both on a bilateral and multilateral basis. MASHAV has sought to systematically increase its programming with other donor countries and UN agencies to expand coordinated and cost-effective human development opportunities throughout the developed world. EcoPeace, the first regional environmental NGO in the Middle East, was founded on December 7, 1994 by Egyptian, Jordanian, Israeli and Palestinian environmentalists with the common goal of furthering sustainable development and peace, and promoting the integration of environmental considerations into the regional development agenda. EcoPeace seeks to strengthen environmental NGO capabilities to work closely with governments in addressing environmental issues; assess and monitor environmental implications of projects or activities in the region that are likely to have significant transboundary impacts; forge a common agenda among environmental NGOs from the region; and address transboundary and common regional environmental issues.

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

Decision-Making: There is no institutional mechanism to identify “hot-spots” in the integration of trade and environment issues. However, there is a strong cooperation between the Ministry of the Environment and the industrial factors in Israel, such as the Manufacturers Association of Israel and the Federation of Israeli Chambers of Commerce. Each has a designated person acting as a liaison to the Ministry of the Environment. This cooperation and interaction includes information exchange, consulting on legal matters, reciprocal up-dating and joint efforts in solving common problems. There has been no derogation of any specific environmental legislation or regulation as an inducement to foreign direct investment. Policy on trade liberalization and globalization is directed at trade and foreign exchange liberalization, deregulation and privatization. The unilateral trade liberalization programme in industrial imports launched in the early 1990s to expose domestic industry to foreign competition has been implemented: import restrictions and non-tariff barriers have been eliminated and MFN tariff rates have been reduced on almost all industrial products. In addition, Israeli trade policy aims at continuing the expansion of its network of bilateral trade agreement.

Programmes and Projects: No information available.

Status: An increasingly liberal and open trade and foreign direct investment regime has contributed to Israel’s economic development. Israel is continuing to move towards an open trade policy regime, mostly through an increasing number of preferential trade agreements. The government has concluded a set of international commercial agreements that have placed Israel in a unique position of having Free Trade Agreements and cooperation agreements with both the U.S.A. and Europe. This can be viewed as an important component of a broader programme toward trade liberalization, comprising a gradual reduction of import duties, which also extends to countries with which no preferential trade agreements exist. During the last decade the State of Israel has gone through some major changes, which have affected its economy and economic growth rate. At the beginning of the nineties there was a big wave of immigration to Israel, a fact that brought about a major national economic growth until the end of 1995. From 1996, the trend began to reverse and the national economic growth declined sharply, also generating a change in trends in investments, import-export balance and payments balance. By the end of the 90s there were signs of rising national growth.

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

Information: Information related to trade, investment and economic growth is accessible to potential users through different mediums, such as formal publications and on the internet.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Israel will continue to promote international trade, investment and economic cooperation, including removal of trade barriers and distortions to global trade. In this context, Israel views the WTO as a cornerstone of its trade policy.

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CHAPTER 3: COMBATING POVERTY

Decision-Making: The following ministries coordinate the government's efforts in combating poverty in Israel: Ministry of the Prime-Minister, Ministry of Construction and Housing, Ministry of Finance, Ministry of Education, Ministry of Labor and Welfare, and the Ministry of Immigrant Absorption. In addition, the National Insurance Institute (NII) functions as the central instrument for reducing economic gaps, and for securing economic protection for every resident and family in times of temporary and permanent need. These goals are achieved by means of a comprehensive system of insurance and welfare programmes developed within the framework of the NII.

Status: Israel is doing its best in implementing the Programme of Action of the World Summit for Social Development Copenhagen 95'. Rapid economic growth prevailing in Israel between 1990-1995 turned into a slowdown between 1996-1999. During 1997-1999, the GDP rose by an annual rate of 2.4%, compared to 5.4% in 1993-1996 and 6.3% in 1990-1992. The slowdown was accompanied by a sharp increase in unemployment; the unemployment rate, which dropped steadily from 11.2% in 1992 to 6.0% in 1996, changed course and began climbing, reaching an average of 8.8% in 2000. The second quarter of 2001 kept an average of 8.7, unfortunately the third quarter showed a high increase of the unemployment rate, and reached an average of 9.3. The rise in unemployment hasn't been equally distributed; it has hit mainly the traditional sectors and peripheral areas, affecting the less educated, the very young, and the older workers.

Financing: Government expenditure on social services grew between 1995-2000 at an annual rate of 4.6%, on average, reaching 20% of the GDP in 2000 as compared to 18% in 1995. Government transfer payments (most of which are social security benefits) grew by 6.6% annually, whereas expenditures on direct social services (such as health and education) rose by 3.5%. Government expenditures grew in per capita terms as well. The rise in government expenditures is mainly due to efforts to improve the transfer payment system, on the one hand, and to decrease unemployment, on the other hand. The former have included increasing benefits to low-income and disadvantaged groups within the framework of the Laws to Reduce Poverty and Income Gaps (August 1994 and June 1995), equalizing the child allowances to all large families (1994-1997), expanding the coverage of the old-age benefit to include housewives (1996), and increasing benefits to the disabled so as to assist them in mobility and daily functioning (1999-2000). The rise in unemployment, since 1996, has burdened the two main schemes that ensure income for the unemployed -unemployment insurance and income support, as both the number of beneficiaries of these schemes and the scope of payments has increased. About a third of the growth in total benefits paid by the National Insurance Institute can be attributed to the increase in payments of unemployment benefits and income support allowances. Few changes have occurred in the dimensions of poverty and income gaps in Israel since 1996. This stability is notable, in view of the recession in economic activity and the slack in the labor market. It testifies to the central role played by the system of transfer payments in ensuring economic protection in times of unemployment and distress. Still, the country's social situation remains a cause for concern. The prevalence of unemployment and economic uncertainty do not herald a turning point in poverty and income gaps, nor do they guarantee that the stability shall continue.

Information: Poverty data in Israel has been systematically collected and published since the early 70's by the National Insurance Institute. The measurement of poverty is based on the relative approach, according to which poverty reflects relative distress that should be evaluated in relation to the standard of living characterizing the population as a whole. Although a family's standard of living is a multi-dimensional concept, expressed through various aspects (income, housing, health, education, etc.) the poverty measure is based on income data alone, which are available on an ongoing basis. The poverty line in Israel is defined as 50 percent of the net median income, adjusted to family size. That is, a family whose adjusted net income falls below half the net median income is regarded as poor. (The net median income is presently \$ 450 p/in for a single person and \$1,000 p/in for a family of four persons.) Each year, the National Insurance Institute publishes a poverty report within its annual survey, which is submitted to the government. The report on poverty usually receives wide coverage by the media, raising the major issues on the public agenda as well as helping the government reassess its anti-poverty policy. Because there is a lag in the collection of data by means of Income Surveys, the latest report relates to 1998. According to the 1998 National Insurance Institute report, 16.6% of all families in Israel had net income below the poverty line, with the average net income of a poor family being 75% of the poverty line. The poverty incidence among children was

higher, at 22.8%. Poverty is not equally distributed among population groups; it is more frequent among families whose head does not work (58.8%), large families (34.9%), and single-parent families (27.0%). The incidence of poverty among the elderly (18.7%) is only slightly higher than that in the population as a whole. During the years 1994-1998, the incidence of poverty among families fell from 18.0% to 16.6%. In 1994, transfer payments and direct taxes extricated from poverty 47.2% of the poor, compared to 53.4% in 1996 and 51.3% in 1998. The reduction of poverty in 1996, as measured by net income, resulted mainly from the implementations of the Laws to Reduce Poverty and Income Gaps (August 1994 and June 1995), which increased the level of benefits paid to low-income families, as well as from equalizing the child allowances paid to large families. By 1998, the beneficial effects of the Anti-Poverty Laws and the child allowance equalization process diminished, which together with the adverse effect of the expanding unemployment, apparently account for the upward trend in the incidence of poverty. The relatively moderate increase in poverty, despite the substantial rise in unemployment, is attributed to the increase in the number of families receiving benefits from unemployment and income support programmes. The fall in poverty rates between 1994 and 1998 characterized not only the population as a whole but specific population groups as well. The fall in poverty was prominent for single-parent families and the elderly. This is so because the government policy to increase benefits was targeted towards these groups. The poverty rate among single-parent families declined from 40.7 to 27.2 percent, and among the elderly - from 25.1 to 18.7 percent. Participation in the labor market did not necessarily protect low waged workers, some in unstable employment, from falling into poverty. Transfer payments and direct taxes, both of which are very progressive, play an important role not only in reducing poverty but also in narrowing income gaps. Almost 44 percent of all transfers are paid to the lower quintile of families, who pay less than 2 percent of all direct taxes, whereas the higher quintile receives less than 10 percent of all transfers and pays almost 70 percent of all direct taxes. Consequently, in 1998 transfer payments and direct taxes reduced income inequality, as measured by the Gini index, by 31 percent.

Programmes and Projects: At the initiative of the Minister of Labor and Social Affairs, a Public Council for Reducing Gaps in Society and War on Poverty was set up in 1996. The Council submitted its final recommendations in December 1999. The Council examined economic and social distress not only from the point of view of income, but also in areas of education, housing, health and social services. It recommended ways of improving the existing methods of measuring poverty and income gaps in order to build a more concrete basis for developing social policy and early intervention programmes. The Council recommended a wide range of policy measures in the area of social services, the emphasis being on locating at-risk populations and identifying needs which the present system does not adequately meet, and allocating targeted resources to weak sectors and to peripheral settlements, and encouraging social initiatives for developing new projects, particularly at the local level. Recommendations of the Council also focused on policies for increasing individuals' competence to join the labor market and improve earning capacity, primarily by investing in education. In addition to a macro-economic policy encouraging growth and employment, the Council recommended improving mechanisms of arbitration between the individual and the labor market and reducing the number of foreign workers. The Council designed three major steps for the protection of the weak employees in the labor market: enforcing labor laws, encouraging unionization of workers, and equalizing manpower company employed workers' wages. These steps were recommended as a central component of the policy to reduce wage gaps.

Major Surveys: Steps have already been taken toward implementing recommendations. Recently, four major surveys of populations at-risk of poverty (the elderly, disabled adults, children with special needs and persons receiving income support benefits) have been conducted. Special emphasis has been placed in these surveys on integrating information with regard to health condition, disability, standard of living, employment history, and sources of income, service provision and unmet needs. The surveys will enable policy makers and service providers to evaluate and reassess current policy measures.

New Experiments: In 1999 the government decided to conduct a large-scale experiment for integrating long-term unemployed individuals, especially those receiving income support benefits, into the work force. This entailed enhancing employability through targeted training, rehabilitation measures and intensive case management. The Minister of Labor and Social Affairs has recently appointed a special commission to propose an experiment design, to be implemented in several geographic areas and accompanied by evaluative research.

The challenge facing the government of Israel – reducing poverty and achieving a more equitable distribution of income-demands a wide range of activities in all areas of family welfare. Economic growth is not sufficient enough,

unless all sectors of the population enjoy its fruit. Due to budgetary constraints, the government of Israel cannot offer a comprehensive solution to social problems in the short term, but does strive to implement the necessary changes for the benefit of all.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: GDP per capita was \$US16,470 in 2000. Private consumption per head was 3% higher in 2000 than in 1995.

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: The Ministry of National Infrastructures is responsible for making decisions on energy issues in general and energy-related aspects of atmosphere and transportation. The Fuel and Gas Authority is responsible for fuel and gas use in Israel, determines tariffs and controls and enforces fuel and gas quality standards. The Natural Gas Authority is responsible for advancing natural gas projects. The Electricity Authority is responsible for decision-making in the field of electricity. The Environmental Unit deals with environment-related energy issues. The Ministry of Environment also takes part in the decision-making process related to energy issues. The Air Quality Division in the Ministry of the Environment deals with air pollution originating from energy production and utilization. Coordination is largely achieved through the work of inter-ministerial committees based on a process of review and revision to reach consensus. The central player and the coordinator of the energy policy is the Ministry of National Infrastructures. Decision-making is mostly at national level. The local level is involved in decision-making related to issues with direct impact on a specific locality, such as siting of energy-producing plants. The Electricity Sector Law of 1996 regulates the activities in the electricity sector to ensure reliability, availability, quality and efficiency. Regulations in effect since 1980 require the installation of solar water heaters in new buildings. Although Israel has not formulated an approved sustainable energy strategy, it has prepared a draft document on sustainable development in the energy sector which is based on the following elements: Taking account of the external costs of energy production that are associated with environmental degradation or deterioration; Promotion of alternative and renewable energy sources; and Energy conservation. The country's primary goal is to ensure reliable and high quality supplies of energy while preserving environmental quality to create the foundation for long-term energy sustainability. Israel's sustainable development document on energy has targeted conservation, especially in buildings, industry, transport and water, as an important measure for achieving sustainable energy development in the short and long term. Also, plans for the prevention of environmental degradation are incorporated within the operational permits of power generating facilities. The plans call for stringent regulations and control procedures, including the establishment of monitoring networks, to ensure that environmental quality is not degraded due to the operation of the power plants. The scientific and technical community is most actively involved in the decision-making process on energy, largely as a result of its research and development activities. Business and industry are involved in decision-making as advisers (through energy companies and the Israel Manufacturers Association). NGOs are also involved as advisers in some issues (Israel Economic Forum for the Environment, Greenpeace, women's organizations, etc.). Activities of other NGOs, not directly involved in the decision-making process, are covered by the media and help raise awareness of energy related issues.

Programmes and Projects: The Ministry of National Infrastructures has supported a number of projects that promote energy and climate-conscious design in buildings. These include a bio-climatic laboratory which enables the study and demonstration of such subjects as energy loss in buildings, shading solutions and natural and artificial lighting. Computer workstations enable architectural design of single dwelling and high-rise buildings aimed at achieving thermal comfort and efficient lighting with minimal energy consumption. In addition, data accumulated during a recent study on daylight luminance has been translated into a designer's manual for efficient utilization of natural luminance. A task force composed of experts in climate-conscious design is being established to provide consultation on urban development projects.

Status: Israel has very limited energy resources. Israel's energy economy is based on fossil fuels, mainly oil and coal. Oil represents the most important source of energy (about 66% of the gross energy consumption). In 1998, approximately two-thirds of the national energy needs were supplied by oil. Coal is the second most important source of energy (more than 30%). Solar energy provides about 3% of the consumption (used mostly for domestic water heating). It is expected that solar energy will contribute more substantially to the energy economy in future years. Natural gas is less developed in Israel than others classic forms of energy. In 1998, the annual supply of primary energy was about 18 million TOE (tons of oil equivalent) with fossil fuel comprising 98% of the total (72% crude oil and 28% coal). Domestic solar water heaters provide approximately 2% of the primary energy supply and natural gas energy currently stands at 0.1% of the gross energy consumption. Both these forms of energy are being developed for larger consumption in the future. The fact that most of the energy production sector is public

constitutes a structural barrier against development and use of renewable energy sources and cleaner fossil fuel techniques. It is anticipated that increased competition will allow small and clean producers to sell electricity to the distribution system and will accelerate the move to clean energy. Additional barriers include insufficient government allocations for research and development on “clean” energy production and renewable energy sources and lack of economic incentives for developing and using clean energy sources. Efforts have also been made to improve the fuel quality of vehicles and to update emissions standards. In 1999, the sulfur content of diesel for transportation was reduced from 0.2% to 0.05%, with plans for a further reduction to 0.015% in the year 2000.

Capacity-Building, Education, Training and Awareness-Raising: To promote public awareness, the Ministry of National Infrastructures operates an advisory office and a toll-free telephone number for advice on energy conservation. Leaflets are available to the public on all major home appliances. The Ministry of the Environment, in cooperation with additional bodies, is spearheading programmes for energy conservation in the domestic sector through a green building initiative. NGOs are actively involved in the promotion of public awareness of energy-environment related issues, especially through the media. Under the leadership of the Ministry of the Environment, the government is promoting public awareness of energy-environment issues. Special days and weeks are dedicated to subjects such as green transportation, air pollution abatement and green building. In 1985, environmental education centers were established throughout Israel within the framework of municipal environmental units. Today, thirty-five local environmental education and information center operate throughout the country. Energy-environment related issues have a central place among other subjects. To assimilate energy conservation principles, students are exposed to the subject at different grade levels. An energy conservation curriculum programme is included in the Education Ministry’s programme for fifth to seventh grades. Training programmes dealing with energy and environment related issues are conducted by government ministries and academic institutions. The private sector also conducts training programmes on energy related issues.

Information: National estimates of air pollutant emissions play an essential role in air resources management. The Ministry of the Environment, in cooperation with the Central Bureau of Statistics, has prepared annual estimates on the countrywide quantities of pollutants emitted into the atmosphere from fuel combustion. The Central Bureau of Statistics also compiles and analyzes information on several energy-related issues. A national air quality monitoring system has been established which includes 24 monitoring stations, three regional centers and a national control center. Geographical Information Systems (GIS) have been developed and used in recent years. These relate to energy and energy-related issues such as air pollution and oil pollution. Such information is disseminated mostly by government publications and through the Internet. The web sites of the Ministry of the Environment and of the Ministry of National Infrastructures provide information on these issues, including monitoring results. The annual report on the state of the environment in Israel, published by the Ministry of the Environment, provides data on energy related issues. In addition, the Ministry of the Environment publishes annual results of air quality monitoring in Israel and organizes study days and forums on the subject. An air quality index is published in the press and the media plays a role in publishing information on energy related issues in general. NGOs also play a vital role in disseminating information on energy related issues at the domestic local level. Israel has recently submitted its First National Communication to the Conference of the Parties to the United Nations Framework Convention on Climate Change. The publication includes data on energy related issues.

Research and Technologies: Most progress has occurred in the development of wind and solar energy. A 200 kilowatt wind facility has been erected at Yodfat, in the lower Galilee, as a pilot project for the possible development of wind turbine farms. A wind farm on the Golan Heights has an installed capacity of 6 megawatts. In the field of solar energy, most homes in Israel use solar water heating, reducing the national fuel consumption by approximately 3%. The solar tower complex at the Weizmann Institute of Science in Rehovot consists of an array of mirrors that can prove up to 3 megawatts of concentrated solar light, and an array of receivers housed in the tower. The Ministry of National Infrastructures has supported research and development in concentrated solar energy technologies at the solar tower and some of the technologies have progressed towards a commercial stage. Progress was stimulated in this field with the formation and operation of a consortium, CONSOLAR Ltd., aimed at developing and commercializing solar energy technologies. The objectives of the project are to develop and test the technology required for the construction of a solar-thermal electric power plant and to construct a commercial solar power conversion system whose components will be integrated with a 250 kilowatt gas turbine. Three main energy

technologies have been developed in Israel for the reduction of greenhouse gas emissions and cleaner production: introduction of natural gas; development and commercialization of solar energy; improvements in fuel quality for stationary and mobile sources.

Financing: Financing of energy-related projects in Israel is mostly by public sources, including the Ministry of National Infrastructures, the Ministry of the Environment and the Ministry of Industry and Trade. Private companies fund energy related projects in the fields of solar energy and geothermal energy. To some extent, bilateral agreements on the environment with such countries as Germany and the United States allow for partial financing of projects by these countries.

Cooperation: Bilateral agreements signed between Israel and the USA and Germany promote the transfer of energy-related technologies. Since 1995, the Ministry of National Infrastructures, in cooperation with the Ministry of Foreign Affairs, has offered a one-month international course on energy management and conservation. Participants, mainly from developing countries, learn about available technologies and methods to utilize and conserve energy. Because Israel has pioneered several solar energy technologies, both for domestic use and for solar power stations, the country's solar energy developments have gained international recognition. The major international treaties concerning energy and energy related aspects of atmosphere are the UN Framework Convention on Climate Change, Convention for the Protection of the Ozone Layer, Protocol on Substances that Deplete the Ozone Layer and the London and Copenhagen Amendments.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: The Ministry of Transport is responsible for decisions in the management and improvement of the transport system and for transport policy in Israel. Decision-making is mostly at the national level, but local authorities play an important role in managing traffic and transport within their jurisdiction. An official responsible for traffic and transport operates in each local authority and coordinates policy between the national and local levels. The Ministry of Transport also supervises over metropolitan transport planning bodies, especially teams working on transport Master plans for Haifa, Tel Aviv and Jerusalem. One of the goals of these teams is to consolidate and implement a comprehensive transport planning policy on the metropolitan level. Regulations on Air Pollution from Vehicles, 1963, under the Abatement of Nuisances Law, prohibit the emission of black smoke from motor vehicles (in accordance with the Hartridge Smoke Meter). The Traffic Ordinance of 1961 authorizes traffic magistrates to enforce provisions of the Abatement of Nuisances Law relating to motor vehicles. Regulations prohibit the registration of a vehicle unless it conforms to inspection standards for emissions, especially European Union standards. The Operation of Vehicles Law 1961, allows the Minister of Finance, after consulting with the Minister of Transport, to regulate the kind of fuel by which any motor vehicle will be propelled and operated and the kind of engine which will be installed. The Minister of Laws, regulations and standards relating to transport have been reviewed in recent years to better reflect environmental issues, especially pollution abatement. Laws, regulations and standards relating to transport have been reviewed in recent years to better reflect environmental issues, especially pollution abatement. A state of the art mobile unit for monitoring pollutant emissions from motor vehicles operates in Israel and air quality inspectors have been trained to carry out a countrywide enforcement programme. The overall strategy concerning the transport system calls for a set of measures, which include the following: development of mass transport (rail and buses) both between cities and within cities; control of private car use in accordance with the capacity of the road infrastructure through use of transportation control measures (e.g., parking restrictions, congestion taxes); reduction of air pollution through introduction of more efficient engines, smaller and lighter vehicles and alternative energy vehicles such as electricity vehicles, and development of the road system to a level which will allow accessibility from all settlements to the road network. The policy, which was adopted by the Minister of Transport and the National Board for Planning and Building in 1998, is largely based on a new approach, which integrates transport and land development policy. A very important Masterplan on land transportation in Israel was completed in 1999, as well as a Masterplan for the Dan metropolitan region, which includes the city of Tel Aviv and adjoining municipalities, slated for completion in 2002. The Masterplan aims to present an integrated strategy for urban planning, rural development and transport infrastructure. In addition, roads and associated facilities form the largest group of environmental impact assessments required by planning authorities in Israel. Israel's transport policy has been set for the coming twenty years (until 2020) within the framework of a Masterplan for land transportation in Israel. The following general goals have been defined: Expansion of transport infrastructure; Sustainable fuel consumption; Reduction of vehicle emissions; Development of alternative transport modes. Recently, citizen groups and non-governmental organizations have taken a more active part in lobbying decision makers to introduce environment-friendly modes of transport. Of special note is the citizen-based consensus conference which was recently held in Israel whereby a group of lay citizens gathered together to study the issue of transportation and formulated a consensus report about it. Such groups as the Car Importers Association and the public transport companies (e.g., the two major bus cooperatives) provide input and information to government officials, in an advisory capacity. The Railroad Authority is involved in decision making on railway development while the Airports Authority is involved in the decision-making on air transport. Scientists at the Technion-Israel Institute of Technology provide scientific information and consultation services which are essential in the decision making process.

Programmes and Projects: Reviews are currently being undertaken with the aim of improving the needs for mobility in urban and rural areas. The government partially subsidizes public transport, largely through subsidies to weaker segments of the population and to daily travelers. Dedicated bus lanes have been introduced in major cities to improve traffic efficiency. In addition, different transportation control measures are being reviewed. They include parking restrictions, high-occupancy vehicle priority lanes, bicycle and pedestrian facilities, congestion taxes, etc. Efficiency in fuel consumption is largely promoted through the introduction of better quality fuel and through information sheets on car maintenance and driving practices targeted at the general public. Measures for

reducing emissions from transportation include requirements for catalytic converters, introduction of unleaded gasoline, lower-sulfur diesel fuel (0.05%) in 1999 with plans for further reduction of sulfur content in 2000.

Status: The Israel's system of transportation is generally adequate to meet commercial, private and public demands, but is not optimal. Thus, for example, the transport of cargo and materials is mostly by road, while the railway pathway, which is safer and more environment-friendly is not sufficiently developed. Public transport services are not sufficiently developed in rural areas and for night travel. In addition, Rail traffic is inadequately developed. Transportation sources are responsible for a lion's share of the country's carbon monoxide pollution and for significant percentages of nitrogen oxide, particulate, hydrocarbon and lead concentrations in the environment. With the exception of lead, the concentrations of all these pollutants have risen dramatically over the past decade. Major obstacles to the adoption of more efficient systems largely relate to financial considerations since significant resources are required to provide environment-friendly and efficient transport systems and infrastructures. In addition, a conservative approach by decision makers has, at times, delayed the introduction of new technologies.

Capacity-Building, Education, Training and Awareness-Raising: Most of the measures to promote public awareness of the impact of transport on the environment are initiated by the Ministry of the Environment and by NGOs. The Ministry of the Environment uses publications, the Internet and campaigns to raise awareness of the subject. The ministry recently published a driver information sheet on proper vehicle maintenance and driving for pollution abatement. Special study days and seminars have been organized to highlight the impact of transport on the environment in urban areas. NGOs increase awareness through public demonstrations and utilization of the media. NGOs have initiated a major public debate and protest revolving around plans for the construction of Road #6 (The Trans-Israel Highway), one of Israel's major arteries, linking the Galilee and the Negev to the center of the country. The significant growth of traffic accidents in Israel coupled with the dramatic growth in number of vehicles has led the Ministry of the Transport to initiate a public campaign designed to educate the public on traffic safety. Radio and television broadcasts have been utilized for the campaign and public service announcements have been aired to underline the potentially disastrous consequences of unsafe driving. Special campaigns and public service announcements are targeted at reducing traffic-related accidents and damages. Several universities and research centers are involved in capacity building in relation to transport and traffic systems. Most notable are the Technion-Israel Institute of Technology-in Haifa and the Department of Geography of the Hebrew University of Jerusalem.

Information: A Citizens' Panel Report on the Future of Transportation in Israel was produced in June 2000 as a result of the "First Citizen-Based Conference in Israel." The project was initiated by an education center, in collaboration with the Transportation Ministry, the Ministry of the Environment and several non-governmental environmental and transport organizations. Information on transport systems in relation to the environment is gathered by transportation stations, which are part of the country's air quality monitoring network. These stations are linked to regional centers and to a national control center that provides real-time information about air quality throughout the country. In addition, information on transport-related issues is gathered by the Central Bureau of Statistics and is published in annual reports. Israel's major bus cooperatives, Fuel Authority, and other organizations provide data upon request to the Ministry of the Environment and to other ministries. Preparations are currently being completed for an air pollution forecasting model for the Tel Aviv metropolitan area and other cities. Information will be available on electronic road signs. Scientific data and information on vehicle emissions is collected by the Central Bureau of Statistics and made available to the public in reports and on the Internet (www.cbs.gov.il). In addition, the Ministry of the Environment publishes reports and brochures on vehicle emissions and its annual report on the environment relates to vehicle emissions. The web site of the Ministry of the Environment is open to the public and provides information on transport and environment-related issues (www.environment.gov.il). Publications on traffic and transport conditions are also be available from the Ministry of Transport and appear on its web site: www.mot.gov.il.

Research and Technologies: The major scheme currently being devised to promote the use of alternative energy sources for transport relates to partial conversion of the vehicle fleet, especially buses, trucks and other heavy vehicles, to liquefied petroleum gasoline. In addition, experiments are ongoing in relation to electric-powered vehicles for use by both buses and private cars. One of the main institutes involved in research aimed at improving

the current design of the transport system in Israel is the Internal Combustion Engines Laboratory of the Technion – Israel Institute of Technology in Haifa. This institute conducts research programmes in the following fields: Possibilities for more stringent tests on all Israeli vehicles. Possibilities of fuel additives to gas oil. Examination of more severe standards for different vehicular pollutants. At present, different schemes are being examined to promote efficient traffic management. These range from to intermittent control systems for traffic regulation in accordance with pollution levels to congestion fees.

Financing: The main sources of funding for building infrastructure are allocations of the national budget. In recent years, the private sector and sources outside of the country have become increasingly involved in major transportation projects such as the construction of major roads and infrastructures, as is the case with the Trans-Israel Highway. Research and development of alternative fuels and transport efficiency is largely financed by public funds, although private funds are used as well. Funding for enforcement of regulations and standards is by the public sector. The government financially supports the purchase of new buses for mass transportation. Supply of fuel is financed by the Fuel Authority of the Ministry of National Infrastructures.

Cooperation: Israel cooperates with the Royal Jordanian Airline to increase the use of this airline by Israeli passengers. Also, initial discussions are being held on an airport common to Israel and to Jordan in the Gulf of Aqaba. Projects exist for increasing the efficiency of transportation systems between Israel and Egypt. At present, participation in international forums is limited and is primarily concentrated on matters related to cargo transport. The Global Learning and Observations to Benefit the Environment (GLOBE) project is an international project dealing with observation and learning on several issues on the environment. Israel is also making efforts to implement the programme - Global Phaseout of Leaded Gasoline.

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CHAPTER 5: DEMOGRAPHICS

Status: In 2000 the population of Israel was 6.3 million, almost eight times its size (805,000) at the establishment of the State in 1948. Both migration and natural increase determined this growth. Although immigration was greater in the first years of the State, considerable immigration has continued. The last wave of immigration occurred in 1990-1993. The increase in the total population averaged 1.8% per year in 1983-1989, and 4.0% in 1990-1993. Compared to those of other countries, Israel's population is relatively young. The Jewish population comprises 78.5% of the country's population, while the country's non-Jewish citizens, mostly Arabs, number about 21.5%. Israel is home to a widely diverse population from many ethnic, religious, cultural and social backgrounds. A new society with ancient roots, it is still coalescing and evolving today. Of its 6.3 million people, 79.8 percent are Jews (over half native-born, the rest from some 70 countries around the world), 16.8 percent are Arabs (mostly Muslim) and the remaining 1.7 percent comprises Druze, Circassian and other small communities. The society is relatively young (median age 27 years), characterized by social and religious commitment, political ideology, economic resourcefulness and cultural creativity, all of which contribute dynamic momentum to its continuing development. Over one million people, comprising some 20 percent of Israel's population, are non-Jews. Although defined collectively as Arab citizens of Israel, they include a number of different, primarily Arabic-speaking, groups, each with distinct characteristics. Muslim Arabs, numbering some 870,000, most of whom are Sunni, constitute 75 percent of the non-Jewish population. They reside mainly in small towns and villages, over half of them in the north of the country. Bedouin Arabs, comprising nearly 10 percent of the Muslim population, belong to some 30 tribes, most of them scattered over a wide area in the south. Formerly nomadic shepherds, the Bedouin are currently in transition from a tribal social framework to a permanently settled society and are gradually entering Israel's labor force. Christian Arabs, who constitute Israel's second largest minority group of some 130,000, live mainly in urban areas, including Nazareth, Shfar'am and Haifa. Although many denominations are nominally represented, the majority is affiliated with the Greek Catholic (42 percent), Greek Orthodox (32 percent) and Roman Catholic (16 percent) churches. The Druze, some 100,000 Arabic-speakers living in 22 villages in northern Israel, constitute a separate cultural, social and religious community. While the Druze religion is not accessible to outsiders, one known aspect of its philosophy is the concept of *taqiyya*, which calls for complete loyalty by its adherents to the government of the country in which they reside. The Circassians, comprising some 3,000 people concentrated in two northern villages, are Sunni Muslims, although they share neither the Arab origin nor the cultural background of the larger Islamic community. While maintaining a distinct ethnic identity, they participate in Israel's economic and national affairs without assimilating either into Jewish society or into the general Muslim community.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: The Ministry of Health (MoH) has primary decision-making in the health arena and has organized its departments and divisions accordingly. More functions of the Ministry focus on policy making, long term planning, setting of standards, quality control and quality assurance, and collection and evaluation of essential data. Thus as of January 1995, after the implementation of the first National Health Insurance Law, all the Israeli residents are insured in 4 public Health Maintenance Organizations (HMOs) and are entitled to get an official basket of services, which is enlarged each year and approved by the government and the Knesset, the Israeli parliament. The MoH intention not to be responsible to public health, geriatric and psychiatric services has not succeeded due to objection of both the parliament and the HMOs. But the governmental hospitals are less and less depended on the MoH for their daily operations and the notion of the coming legislation is to turn them into an Executive Agencies. But the dissatisfaction the Israeli Medical Association from their salaries and their aim to establish also private medical services in the public hospitals has led to the nomination of a national inquiry committee on the future of the public medicine in the country.

Programmes and Projects: Numerous health education and health promotion programmes have been continuously run in country to promote health related behaviour of the population. But the diversity of the Israeli residents in terms of ethnicity, religion and country of origin requires establishments of programmes which are cultural sensitive and in a few languages. These are operated by the HMOs, NGOs the municipalities (health promoting cities and health promoting community centers) and by the public health services of the MoH. A network of family health centers, which are responsible for preventive medicine and health promotion, mainly for women and children age 0-6, are spread throughout the country even in the most remote areas. These centers are operated mainly by the MoH, the two largest cities and less by the HMOs. The school health service is operated by the public health services of the MoH. The Knesset (the Israeli parliament) has recently approved a most advanced law, which restricts smoking not only in working places but also in all the medical institutes and public areas.

Status: 45% of health expenditures go to hospitals and more and more procedures are directed to ambulatory services, which are supplied by the four HMOs. The infant mortality is in the trend of continuous decline and the life expectancy is in a rise. The challenges remains in the field of nutrition (food fortification and supplementation) and obesity to combat diabetes, heart and vascular disease.

Capacity-Building, Education, Training and Awareness-Raising: The four medical schools and ten academic schools of nursing as well as two dental schools and schools of pharmacies and health related sciences are in a continuous quality improvement. The two schools of public health and the epidemiology programme in a third university are attracting different professionals. All the health professionals have established in-service training and there is a large investment in this area. The department of health education and health promotion in the MoH is using the mass media as well as the conventional routes to spread its productions. The same applies to the HMOs and relevant NGOs. All the daily newspapers and general TV channels are publishing health columns and programmes. The public is under a flood of health related information.

Information: The MoH has established the Israeli Center of Disease Control which manages more and more health information as well as initiating and conducting health and attitudes surveys of the population. This institute is publishing continuously on different matters as well as the yearly book of the Health of the Nation. Those activities are in addition of the health data processing of the Israel Bureau of Statistics.

Research and Technologies: Research activities are performed in a various academic institutions by budgets of both the governments and grants from Israel and abroad. New technologies in the fields of immunizations, medications and medical devices are explored.

Financing: In 2000, health expenditures amounts to 8.4% of the GDP in comparison to 8.1% in 1993. But 48% of the national health expenditures were financed by the households, including health insurance premiums and out-of-pocket fees. The household's payments to the HMOs are comprised 30% of the public health expenditure and it is

on a rise in comparison to 25% in 1993. The households for complementary insurance, out-of-pocket fees pay another 23% as co-payments of medicines and medical services provided by private physicians, clinics and dentists. The proportion of health cost funded by general taxation is in a low continuous decline.

Cooperation: The cooperation between the state of Israel and the Palestinian Authority in the health field was very active and rewarding to both sides till the last clashes started in September 2000.

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CHAPTER 7: PROMOTING SUSTAINABLE HUMAN DEVELOPMENT

Decision-Making: A new legislative bill proposes to create a “Commissioner for Future Generations”, who would present to Parliament data and expertise on subjects of particular concern to future generations. These would include environmental quality, natural resources, science, development, education, health care, market and economy, demography, planning and construction, quality of life, and technology. The Planning Administration at the Ministry of Interior has developed a new approach to planning which will leave part of the planning and decision-making to future generations. These new tools leave some decisions concerning the environment to future generations by allowing them to choose from a recommended range of planning scenarios, rather than pre-determining all land uses or levels of intervention. The Planning Administration has incorporated this approach into national planning in two ways: 1. A new comprehensive National Outline Plan 35 (NOS 35), developed through an inter-ministerial committee. Of particular importance to the Plan is the ‘Urbanity Principle’ which requires priorities for urban settlements, in order to prevent undesirable phenomena resulting from non-intervention - rural areas turning into suburbs, out-migration of well-to-do populations from urban centers, considerable investments in infrastructure, traffic jams, inefficient land use and growing social polarity. 2. The Committee for Coastal Waters takes decisions on coastal plans it receives, in conjunction with the National Council for Planning and Building. In this vein, the Committee for Coastal Waters prepared a policy document as a tool for sustainable development. This document declares its intentions and objectives, by way of transparent rules and guidelines that will aid entrepreneurs and planners in their efforts to receive planning approval. This policy document is set to prevent the exploitation of the coast as an accessible development alternative when open territory on dry land becomes too crowded. It is intended to protect the public status of Israeli Mediterranean beaches - their scenic, environmental, and ecological value - for coming generations. The document sets priorities for public recreational uses and deals with the conflicts between uses and processes along the coast. It provides recommendations on Integrated Coastal Zone Management (ICZM) that the Committee for Coastal Waters will use. It outlines the basis for demands for environmental impact statements that will accompany local plans.

Programmes and Projects: Improvement of circumstances in socio-economically deprived areas “Project Renewal” is a capacity building tool for alleviating deprivation in localities of a relatively high degree of poverty. Its inception in the early 1980's, by the Ministry of Construction and Housing, followed a process of inter-ministerial discussion concerning the approach to urban (and later rural) rehabilitation in designated areas. Flexibility and adaptability to constantly changing conditions coupled with the adoption of a differential planning approach, serve to promote the continued resourcefulness of the project. The approach includes:

- 1) Making suitable improvements in housing conditions and physical infrastructure.
- 2) Upgrading the quality and accessibility of social services.
- 3) Increasing opportunities for social mobility.
- 4) Providing for the needs of the elderly within the local community.
- 5) Encouraging local residents to participate in the local decision making process.
- 6) Reinforcing the links between neighborhoods and their urban surroundings.
- 7) Strengthening the local economic infrastructure and promoting local entrepreneurial activities.
- 8) Promoting the social integration of new immigrants.

Efficient land use in built urban areas by increased building rights: Various national plans have determined that as much of Israel's future construction as possible should be concentrated in built urban areas. This is in order to preserve open space and ensure efficient use of land resources, infrastructure and public institutions. The additional construction is expected to stimulate the regeneration of building stock and prevent physical and social urban decay. In 1999 the Government appointed an Inter-Ministerial Committee to initiate various revitalization programmes. The first programme, recently launched, aims at increasing construction in built areas by encouraging reconstruction (demolition and construction) through conditions that facilitate market-motivated reconstruction at selected sites. The government allocates budgets while the sole responsibility for implementing the development rests with the municipalities. The municipalities, by providing increased building rights at relevant sites, stimulate market-based revitalization. Municipal response to this project has been enthusiastic. Additional legislative steps are being taken to offer municipal and national tax deductions for urban revitalization sites during the specified life of the project (six

years). A second programme for urban revitalization is to be based on increasing building volume, through expansions and addition of floors rather than demolition and reconstruction.

Innovations in housing assistance: The Committee for the Examination of the Secondary Mortgage Market in Israel, 1998 recommended the establishment of such a market to improve the flow of capital for mortgage banks, and increase their flexibility in management of interest and liquidity risks. It will encourage a standardization of loan contracts that will give the borrower a basis for comparison between the various banks, and the collection of data on the behavior of borrowers in meeting payments. Recommendations of the Committee for Policy on Housing Assistance, 1998, identify improvements that have required a budget increase of more than one billion NIS -of that 400 million NIS are in the form of subsidies. Implementation includes:

- 1) Improved point ranking system for housing assistance for long-time resident couples and additional points for special groups (e.g. immigrants, single parent families, singles over 45 and the handicapped).
- 2) An increase in the number of housing assistance brackets and the addition of a higher aid bracket.
- 3) Reclassification of priority zones for receipt of housing assistance.
- 4) Compensation for time spent in national service in proportion to length of service (the cumulative amount of both members of the couple) - instead of a flat rate for all.
- 5) "Project 10+" -A programme designed to meet the housing needs of families that have accumulated 10 years of eligibility and earn income of up to 80% of the mean income.

Status: The primary shelter-related objective of the Israeli government is to facilitate the right to adequate shelter for every Israeli household - preferably in terms of the ability to purchase a home. The most common housing status in Israel is private ownership, comprising 71% of housing. Sixteen percent of housing in Israel is rented. Even when tenants have not paid their rent, an eviction must be carried through the courts, a long and expensive process for the landlord who cannot generally be awarded compensation from a tenant of no financial means. Six percent of housing in Israel is low rent public housing. The Public Housing (Purchasing Rights) Law, 1998 enables the government to initiate the sale of publicly owned apartment buildings to their tenants at drastically reduced prices. Long term tenants and their resident offspring may now purchase their apartment at prices, adjusted in respect of the rent paid over years of tenancy, representing a small percentage of market cost. Two percent of Israeli housing is by "key money". This is a system of rent controlled housing, usually in big city centers, whereby the renter cannot be evicted and may sub-let to another tenant who is then protected under the same conditions as the original renter.

Capacity-Building, Education, Training and Awareness-Raising: Urban social and environmental awareness: Much of the strategy for improving safety, health, environmental protection, equity and sustainability is anchored in consciousness raising. Most initiatives use enabling and mediating strategies, a democratic approach and a call for partnerships. They require data collection, setting targets, and involve the community in listing priorities and evaluating activities. Often, the best way to implement goals and related activities is on the local government level.

Approaches include:

- 1) Formalization of sustainable development concept with definition of indicators. Increasingly effective Israeli Ministry of the Environment activities, aided by success of NGO activities.
- 2) More investment by the Ministry of Health in health promotion. Future plans for either direct service or indirect financing of initiatives in cities, schools and community centers.
- 3) Increasing interest in a comprehensive approach to improvement of safety and prevention of injuries (traffic, home, work). Several academic and NGO bodies in Israel now deal with these issues, some using North American frameworks, e.g., "Safe Communities" and "Safe Kids" initiatives.
- 4) Programme by the National Insurance Institute (NIS) to finance up to 80% of renovations of government and institution buildings to increase access for handicapped persons.
- 5) A "Healthy Cities Network", established in 1990, has expanded to include 32 cities and towns. Each member city commits itself to the principles and strategies of "health for all", of "local agenda 21" and a recently adopted equity agenda.

Capacity building and institutional development: Priorities for capacity building and institutional development in Israel have focused on local democracy - empowering local governments (numbering 266 as of the year 2001) and municipal residents. The Ministry of Interior aims to establish equitable, transparent and accountable procedures by overseeing local authority budgeting, taxation, provision of services, etc. The policies of most government ministries

dealing with local development issues (e.g. , Education, Transport, Construction and Housing, etc.) place the bulk of responsibility on local authorities and neighborhood councils, who may in turn contract private entrepreneurs. Some government programmes take it upon themselves to organize and develop interested parties where none exist, e.g. Ministry of Construction and Housing's "Project Renewal" - for development of deprived areas and its first "Urban Revitalization Programme" - for efficient land use in built urban areas.

Financing: Government incentives stimulate the private sector via partnerships, and other arrangements -e.g., guaranteed loans and "closed budget" development projects where investment in infrastructure is recouped in the sale of the housing unit. Thus the government can increasingly rely on the private sector to address the housing and urban development concerns of socio-economically stronger elements of the Israeli population. This should allow for greater efficiency in the channeling of government resources to needy populations. See market-based revitalization above.

Cooperation: Israel is committed to continued participation in international funding efforts for developing countries, humanitarian aid, technical and economic exchanges and partnerships, educational projects and absorption of refugees. Through its membership in international organizations, Israel has been able to reap the benefits of numerous international conventions and agreements, to improved national, regional and global quality of life issues. Furtherance of these ties and relationships is one of the main goals of Israeli foreign policy.

1)Initiation of projects within the framework of the peace talks on the environment including an Upper Gulf of Aqaba Oil Spill Contingency Plan, a Desertification Initiative and a Regional Project on the Safe and Effective Use of Pesticides.

2)Bilateral agreements for environmental cooperation and joint action programmes with numerous states including the United States, several European countries, South Africa and Turkey.

3) Implementation of a Coastal Areas Management Programme (CAMP) for Israel and a sub-regional agreement between Egypt, Cyprus and Israel on preparedness and cooperation in response to medium and large-scale oil spills.

4) Israel Nature and National Park Authority (INNPA) joint activities in association with Palestinian governmental and non-governmental organizations such as joint training seminars and workshops for Palestinian nature protection officials INNPA officials, joint law enforcement patrols, etc.

5) Establishment of the Palestinian Israeli Environmental Secretariat (PIES), 1997 by the Economic Cooperation Foundation (ECP), the Palestinian Council of Health (PCH), and the Society for the Protection of Nature in Israel (SPNI). PIES aims to forge a Palestinian-Israeli commitment to environmental protection and sustainable development based on mutual interests. Future initiatives and progress monitoring activities:

1. Continued promotion of cooperation between the countries of the Eastern Mediterranean and adjoining states to establish common working relationships based on exchanges of information and professional cooperation on regional development projects. 2. Establishment of an international infrastructure for regional planning and implementation of projects regarding water, electricity, transportation, waste disposal, etc. 3. Maintaining ties and forging new links between Israeli and European regional planning groups, international agencies (UN, UNCHS, etc.) and NGOs, whose support, monitoring and encouragement of initiatives for regional cooperation is essential to their success. 4. Maintaining joint Israeli-Palestinian activities regarding ecological and environmental problems of common concern within shared geographical areas; leading to bilateral understanding in term of all aspects of co-existence.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: Since the 1990s, environmental aspects have been incorporated at an early stage of the planning process into regional and national plans, in addition to environmental assessment of detailed plans of specific projects under the Planning and Building Law of 1965 and the Planning and Building Regulations of 1982, which deal with Environmental Impact Statements for all major development activities, at national, district and local levels.

Programmes and Projects: Following the 1992 Rio Conference on Environment and Development, sustainable development policy principles were introduced into Israel's environmental management. The Ministry of the Environment is formulating a proposal for a comprehensive sustainable development strategy in conjunction with government ministries, local authorities, industry, academics and non-governmental organizations.

Status: Israel today has become a densely populated nation, in which 92% of its 6.3 million inhabitants live in an area, which covers only 40% of the land area, concentrated in the coastal area. Since 1989, there has been a large influx of immigrants to Israel from the former Soviet Union and Ethiopia. This phenomenon, together with the peace process and the rapid rate of industrial development in Israel, has resulted in the drawing up of a national long-range master plan for the 21st century - "Israel 2020", prepared under the auspices of the Ministries of Housing and the Interior as well as the Jewish Agency Settlement Department, the Israel Lands Administration, and involving the Ministries of Finance, Education, Culture, and Transport. Israel 2020 was to be completed and submitted to the Government in 1997, with the aim of preparing comprehensive strategic documents as a framework for national plans for the next 20 years. Environmental considerations form an integral part of the master plan, which deals with sustainable development policies for various sectors, including transport, energy, the urban sector, tourism, agriculture and open spaces.

Capacity-Building, Education, Training and Awareness-Raising: Since the early 90's, environmental issues have been of major concern to the national planning authorities. This is also due to the use of EIS and the concern for water and open space. The preparation of EIS and environmental documents and the establishment of proper waste treatment facilities are all based on strong regulation. Representatives of environmental NGO's are involved at any major development plan.

Information: No information available.

Research and Technologies:

Monitoring and evaluation methods for open space were developed from the early 90's, resulting from the need to manage development that is facing the scarcity of land.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: The Ministry of the Environment is responsible for many of the decisions on the protection of the atmosphere. Its Air Quality Division is responsible for activities related to monitoring, drafting of legislation and standards, and enforcement. The Ministry of Environment in partnership with other Government Ministries coordinates protection of the atmosphere - Government bodies coordinate their work through inter-ministerial committees. Decisions are taken through a process of continuous review and revision until consensus is reached. In addition, Israel has initiated a negotiated rulemaking procedure, with the participation of representatives of government ministries and relevant bodies, for the purpose of formulating environmental standards, including emission and ambient standards. However, the trend in environmental administration is toward greater cooperation among local authorities in a variety of regional matters, including air pollution. Numerous local authorities have banded together within the framework of town associations for the environment. Under the Planning and Building Law, Environmental Impact Assessments (EIAs) are required since 1982 for major projects enumerated in the law or required by planning authorities. The EIA must include an assessment of anticipated environmental impact and the means necessary to prevent or abate negative impacts, including restrictions on emissions of air pollutants from planned installations as dictated by emission standards based on Best Available Technology (BAT). The 1961 Abatement of Nuisances Law is the principal legislative instrument for controlling air pollution. It authorizes the Minister of the Environment to promulgate regulations defining what constitutes considerable or unreasonable air pollution. Israeli air quality standards were defined in a regulation first promulgated in 1971 and revised in 1992. The Ministry of the Environment has drafted emission standards for the following air pollutants: gaseous inorganic substances, volatile organic compounds, particulate matter, hazardous inorganic particulate matter, carcinogenic substances, nitrogen oxides and sulfur dioxide. Although these standards have not yet been published as regulations, a Covenant on Implementation of Standards on Pollutant Emissions into the Air was signed between the Ministry of the Environment and the Manufacturers Association in 1997. Top priority is accorded to the creation and implementation of a comprehensive legal infrastructure and guidelines for all sectors that may adversely impact the atmosphere including transport, energy generation and industry. While an overall national strategy for protecting the atmosphere has not been officially adopted, proposed strategy includes the following elements: Reduction of vehicular pollution through the introduction of alternative and cleaner fuels, new and updated standards, more effective enforcement, and mass transport systems including railways; Reduction of pollution from energy generating stations and development of alternative, non-polluting sources of energy; Reduction of pollution from industrial plants with the aid of legislation, stringent supervision and enforcement, and introduction of cleaner fuels; Completion and operation of Israel's national air monitoring network and wide publication of results through a variety of means including electronic signs, the media and the Internet; Promotion of energy conservation to lower both consumption of energy and emission of pollutants; Promotion of education and public awareness on issues related to protection of the atmosphere. The main groups involved in the decision-making are business and industry, the scientific and technological community, and NGOs. Industrialists are involved in the decision-making process by participating in advisory environment-related forums. NGOs play an advisory role in these forums, representing the concerns of consumers and environmentalists. The Israel Economic Forum on the Environment was established in 1991 with the aim of increasing environmental awareness of the business community, deepening industry's involvement in the advancement of environmental quality and minimizing the environmental and atmospheric impacts of industrial operations.

Programmes and Projects: Several government agencies as well as universities and private groups are involved in the development of methods or programmes aimed at providing a better understanding of atmospheric changes.

Status: A preliminary attempt to assess how systems in Israel will react to climate change has been completed. Given the level of medical care and standard of life in Israel, it is unlikely that climate change will adversely impact human health. Nevertheless, it is possible that climate change will facilitate the spread of existing vectors and the establishment of invasive ones and will increase the probability of water-related epidemics. It is also possible that sandstorms and dust storms, which are expected to increase with climate change, will exacerbate respiratory disorders. Israel has prepared a national inventory of emissions and removals of greenhouse gases. By far the largest source of CO₂ emissions is the oxidation of carbon when fossil fuels are burned to produce energy. CO₂

emissions from electricity production have grown steadily in the 1990s, largely as a result of the dramatic increase in population and economic activity in Israel (Israel's population grew by nearly 30% over the past decade with the influx of over 950,000 immigrants in the 1990s alone). The contribution of methane emissions from decomposition of solid waste is very significant. It is second in importance only to the contribution of CO₂ from energy production. Atmospheric pollution affects different parts of the country, but especially the population residing in congested urban areas. There is no mechanism of compensation or protection from damages caused by air pollution.

Capacity-Building, Education, Training and Awareness-Raising: The Ministry of the Environment and NGOs are the major actors involved in promoting public awareness of climate change and protection of the atmosphere. They disseminate information by utilization of the media, publications, demonstrations and school programmes for students. Results of air monitoring in Israel are published on the Internet site of the Ministry of the Environment. Public information campaigns focus on air quality and on enforcement of environmental legislation, including laws related to pollution from motor vehicles. Drivers whose cars do not comply with air quality standards are subject to fines. Since 1995 Israel has participated in the Global Learning and Observations to Benefit the Environment (GLOBE) project, a worldwide network of students, teachers and scientists working together to study and understand the global environment. The three-year programme is implemented in 60 elementary, junior and senior high schools throughout the country. Students take part in scientific observations in a number of areas, including atmosphere and climate. In addition, an energy conservation curriculum programme is included in the educational programme for fifth to seventh grades. At higher levels, drawing competitions are held and a national energy conservation contest is conducted.

Information: The Ministry of the Environment has established a 24-station national monitoring network, composed of population and transportation stations, regional control centers and a national control center for data storage, analysis and display. Israel has established and operates a computerized national air quality-monitoring network, which generates real-time information about air quality throughout the country. In addition, the Ministry of the Environment has begun to develop indicators on air pollution, which currently relate to nitrogen oxides, sulfur dioxide and particulate matter. Scientific data and information, based on the results of the national air quality monitoring network, appears on the web site of the Ministry of the Environment: www.environment.gov.il 1994, 63 air monitoring stations were operating in Israel. All of them monitor sulfur dioxide. Nitrogen oxide and particulate matters are monitored in most of the stations, and ozone and/or carbon monoxide in a few. A new network monitors airborne chemicals at the hazardous waste disposal site. The monitoring network, as it is today, is not comprehensive enough for formulating a national air quality management programme. Consequently Israel has recently prepared a preliminary programme for a multimillion-dollar national air monitoring system with a central data storage and display center. The national system will be based on three levels of activity: individual stations, regional control centers and a national data processing center.

Research and Technologies: Changes in the technology of cement and lime plants from a wet process to a dry process will bring about considerable savings in the use of fuel, estimated at 53%. In the agricultural sector, improved manure management and introduction of controlled release fertilizers are expected to help reduce greenhouse gas emissions. The air monitoring network includes a national control center in Ramle, three regional centers and 24 monitoring stations based on the following four categories: General stations, population zone stations, secondary pollutant stations monitor, and transportation stations monitors. The analytical monitors in each station are fully automated and EPA approved. In addition to monitoring the pollutants noted above, each station contains an automatic calibration system, temperature and relative humidity sensors, data acquisition and transfer hardware, wind speed and direction measurement. At the National Solar Energy Center at Ben-Gurion University of the Negev a wide array of solar-thermal facilities exist for testing purposes. The Center is active in solar radiation studies, photovoltaic research, solar-thermal research, and advanced parabolic troughs research. Of special interest is the use of a 25-m diameter parabolic dish to generate electric power by concentrating solar energy onto a relatively small area of photovoltaic cells. Some of the technologies developed in universities have formed the basis for industrial scale application. An industrial consortium has been set up to develop concentrated solar energy technologies aimed at future commercial applications. Additional alternative energy technologies include the "energy tower" developed at the Technion-Israel Institute of Technology and wind energy.

Financing: The main sources of funding are public. At present, ideas are being discussed with respect to means of increasing the volume of funding for protection of the atmosphere.

Cooperation: Israel has signed bilateral agreements with several countries on environmental protection, including cooperation on protection of the atmosphere. Agreements signed with the United States Environmental Protection Agency and with Germany, for example, include a framework for scientific and technical cooperation and for development of more advanced standards. Academic cooperation is an important element where universities cooperate to develop programmes of monitoring and protection of the atmosphere. Israel ratified the United Nations Framework Convention on Climate Change in 1996 and signed the Kyoto Protocol in 1998. Israel established an inter-ministerial committee on climate change in 1996 whose members include representatives of relevant government ministries, industries and non-governmental organizations. The committee is charged with formulating national policy and strategy, while closely following up on developments in the field. With regard to policy on climate change, following the ratification of the United Nations Framework Convention on Climate Change (UNFCCC) in 1996, the government instructed the Environment Minister to establish an inter-ministerial committee to formulate Israel's policy on greenhouse gas reduction. Israel ratified the Montreal Protocol in 1992 and has subsequently ratified the London, Copenhagen and Vienna Amendments. Israel is adopting European standards on vehicle emissions. It has adopted the European standard for diesel and the European standard on unleaded gasoline for automobiles.

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

Decision-Making: All building and land use activities in Israel are regulated through the legislative framework, which operates through a three level hierarchy - national, district and local. The National Planning and Building Board (the National Board) at the top level of national planning, is composed of representatives of government ministries, local government and public and professional organizations, including nature protection bodies. The primary responsibilities of the National Board are to enact national outline schemes (NOS), review regional outline plans and serve as an appeal board for decisions of the District Planning and Building Commissions. The regional level is the responsibility of six District Planning and Building Commissions, composed of regional representatives of government ministries and representatives of local authorities. They receive the national outline schemes for comment, prepare their regional outlines schemes for approval by the National Board and assess plans submitted to them by the local level of the hierarchy. The local level consists of about a hundred Local Planning and Building Commissions, serving one or more local authorities and composed of the elected members of the municipal councils. The Local Commissions prepare outline and detailed schemes for their areas and submit them for approval to the District Commissions. A master plan for the 21st Century, Israel 2020, was completed in 1996. This study established models for the evaluation of open space, evaluation of building density, and set the basis for revising transport policy. Following on from this the National Outline Scheme 35 for building and development was drawn up and is at a draft proposal stage. The sustainable development policy within this has three primary goals: intergenerational equity, intragenerational equity and economic growth. The main emphases are on the efficient use of land; effect on the landscape; conservation of open space; and development within settlements. There are no specific ways of dealing with possible land use conflicts in planning policy at present. However, there is a move to encourage consensus building amongst stakeholders in the planning system by the Ministry of Justice and the Ministry of the Environment. The National Board and the District Commissions offer a forum for coordination among the responsible bodies for land management as members where various governmental and non-governmental organizations participate in the meetings and the decision-making. The involvement of communities and people at the local level in decision-making on land use management in Israel is minimal.

Programmes and Projects: No information available.

Status: In 1993, some 96% of Israel's domestic waste found its way to about 500 garbage dumps. Most of the sites were poorly managed and many had reached or were soon to reach full capacity. Recognition of the severity of the problem led to a landmark government decision in 1993 that was later incorporated into an amendment to the National Outline Scheme for Solid Waste Disposal. The decision mandated closure of most of the country's unregulated dumps, including Hiriya near Tel Aviv, and their replacement by 14 regional and five central landfills. The decision required all landfills that appeared in the original master plan of 1989 to comply with stringent conditions stipulated by the Environment Ministry in their business licenses. Progress has also begun on rehabilitating garbage dumps that were closed in recent years. A few sites have already been rehabilitated according to strict environmental standards, and rehabilitation plans for others are now on the drawing board. There is very strong protection of forestlands in Israel, most of which have been planted in the latter half of this century. The transfer of forestlands for other land uses is minimal and if this is allowed, there is an obligation on the developer to establish forest in compensation somewhere else. Specific permission is required for the destruction of forest. The major challenges to the development of integrated land management and the sustainable use of land resources in Israel remain the scarcity of land, water quality and quantity problems, population growth and the loss of agricultural land to other land use designations.

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

Information: A comprehensive analysis of open spaces has been carried out whereby the country has been divided into landscape or open space units. There is also a computerized geographical information systems database. The project is a collaboration between the Ministry of the Environment, the Society for the Protection of Nature in Israel, the Nature Reserves Authority and the Jewish National Fund. Environment is dealt with in a separate section

of the National Statistics, including air quality, water quality, expenditure on the environment, etc. The main land inventory and mapping is done by the Israel Land Survey, which is responsible for mapping and gathering information concerning land use. The Ministry of the Environment, the Ministry of the Interior, and the National Parks Authority manage databases concerning land use. There is a growing awareness and use of remote sensing and geographical information systems used by ministries, public authorities and large companies. There is no specific source for land use management data but information can be obtained from Government offices including the National Bureau of Statistics, which has a site on the internet <http://www.cbs.gov.il>. General environmental information from the Ministry of the Environment is also available on <http://www.environment.gov.il>.

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CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: A National Outline Scheme for forestation was approved in principle by the National Planning and Buildings Board in 1993. The plan, implemented by the Jewish National Fund, calls for the planting of 200 million trees in an area of 81,000 hectares, and it designates over 15 of Israel's total land area for the conservation of forestlands. About 50 of the JNF's tree planting endeavors are carried out on forestlands.

Programmes and Projects: No information available.

Status: The forests, which once covered the land of Israel, were destroyed over the centuries; most of those seen today have been planted since the beginning of the century. When Israel became independent in 1948, there were about 4.5 million trees; today, their number has reached about 200 million.

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 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: A planning workshop organized under the auspices of the Initiative for Collaboration to Control Natural Resource Degradation of Arid Lands in the Middle East in 1999 at Mitzpe Ramon, established a template for an Israeli National Action Plan to Combat Desertification. Following the workshop, the Blaustein Institute for Desert Research (BIDR) compiled a desertification research programme that includes 50 multidisciplinary project proposals. An Intra-governmental Steering Committee on Desertification was set up by the Ministry of Foreign Affairs to coordinate the activities of government departments related to combating desertification, including the implementation of a bilateral Spanish-Israeli agreement on collaborative research to combat desertification in both countries.

Programmes and projects: In the dry, sub-humid dry lands - programmes and projects for remediation of salinized agricultural lands and management of water resources for an effective protection from pollution and for conservation. In semi-arid dry lands programmes for control of stocking rates of free-ranging livestock and afforestation for preventing soil erosion, restoring aquifer recharge, producing firewood and promoting biodiversity, and projects for orchard development (olives, citrus) irrigated by treated wastewater transported from the heavily populated parts of the country. In arid and hyper-arid dry lands - projects for flood control and water storage, for treating wastewater for gardening uses, for environment-friendly road construction and for management of natural vegetation, development of alternative livelihoods for farmers, which are economic on water and land use - greenhouse intensive agriculture and aquaculture (fish, shrimps, micro-algae).

Status: Despite early successes in rehabilitating desertified land and preventing desertification, signs of emerging desertification are noticeable - gully erosion, soil salinization and reduction in pasture quality. Risks of larger scale salinization of soil and groundwater may grow due to expansion of irrigation with treated wastewater irrigation or brackish fossil water, and risks of sheet soil erosion due to extensive irrigation practices, road construction and heavy vehicle use on fragile soils. All these call upon vigilance and urgency of action programmes and projects.

Capacity-building, Education, Training and Awareness-Raising: As of 1998 the Albert Katz International School for Desert Studies of the BIDR runs a two-year teaching programme leading towards an MSc degree in Desert Studies. The programme and the degree are authorized by the Israeli Council of Higher Education. The programme provides specializations in dryland agriculture, environmental physics, dryland water resource management, desert ecology and studies of Man in Dry lands. It is open to both Israeli and foreign students, and the teaching language is English. To date 50 students have enrolled in the programme, and 10 have already graduated. The School also operates training courses of the Center for International Cooperation of the Ministry of Foreign Affairs related to desertification issues. The Jewish National Fund is advancing an awareness-raising programme by establishing together with the BIDR a "Desertification Information Center", which is a computer-mediated PR and awareness facility, engaged in interpretation and remote teaching related to anti-desertification and desert development projects of the JNF, backed by research of the BIDR.

Information: The following Internet sites provide information on combating desertification in Israel: <http://www.bgu.ac.il/BIDR/rio/index.html>, <http://www.bgu.ac.il/BIDR/MEPP/index.html>, <http://desertproject.org/>.

Research and Technologies: The Agricultural Research Center ("Volcani Center") of the Ministry of Agriculture, the Faculty of Agriculture and Environmental Studies of the Hebrew University of Jerusalem, the Institute of Agriculture and Applied Biology in the Bergman Campus of Ben-Gurion University of the Negev and the Jacob Blaustein Institute for Desert Research in the Sede Boqer Campus of Ben-Gurion University of the Negev are generating know-how, methods and technologies for sustainable dryland development and for combating desertification, in Israel and worldwide. Among the results of this multidisciplinary and concerted effort are: drip-irrigation and drip-fertigation above- and below-ground, including the use of treated wastewater; desalination technologies for brackish water with special attention paid to environmental health; new crops and varieties resistant to extreme dryland conditions, advances in construction and operation of protected growth-houses, passive

cooling and heating of desert residence facilities, urban planning in dryland areas, water storage and groundwater protection, landscape management and construction for reducing risks of soil erosion and desert floods and for promoting vegetation and biodiversity, use of brackish water for aquaculture in deserts, tapping dryland biogenetic resources for pharmaceuticals and cosmetics, and solar energy facilities for isolated human settlements.

Financing: All projects and activities are financed through budgets of different ministries of the Government of Israel, by NGOs- mainly the Jewish National Fund, and by Israeli universities, nourished by government, international organizations, and donors. The private sector is also involved in various projects leading to averting desertification and sustainable development of Israel's dry lands.

Cooperation: Israel was active in the negotiations on the elaboration of the United Nations Convention to Combat Desertification and has taken a lead in drafting the Asian Implementation Annex to this Convention. Israel ratified the Convention in 1996, and then participated in and contributed to all the Conferences of the Parties ever since. The high priority accorded by Israel to the global effort in combating desertification led to initiate in year 2000, with the assistance of a loan from the Government of Israel, the upgrading of the physical infrastructure of the BIDR's Sede Boqer Campus of Ben-Gurion University of the Negev, to function as an International Center for Combating Desertification. The Albert Katz International School of Desert Studies is the major instrument of the International Center for Combating Desertification in Sede Boqer for disseminating know-how and transferring technologies for sustainable dryland development to trainees, students and experts from affected developing countries, Parties to the UN Convention to Combat Desertification, as well as other countries in Asia, the Mediterranean basin and the Middle East. Many of the training courses of the Center for International Cooperation of the Israeli Ministry of Foreign Affairs address issues related to sustainable desert development and are attended by experts and trainees from desertification-affected countries (e.g. in year 2000 alone the Center conducted training and consulting activities in 12 African countries, seven Asian countries and one European country). The BIDR served as the coordinator for Israel in two Middle-East regional projects for combating desertification- the "Joint Study for Combating Desertification in the Arava Valley" (Jordan, Palestinian Authority and Israel), under the auspices of the UNCCD, and the "Desertification Initiative" (formerly the "Initiative for Collaboration to Control Natural Resource Degradation of Arid Lands in the Middle East", and now the "Regional Initiative for Dryland Management"-Jordan, Egypt, Tunisia, the Palestinian Authority and Israel), under the auspices of the Working Group on Environment, the Middle East Peace Talks. The Peres Center for Peace coordinates an AID-supported Desert Development Programme - joint cooperation on agricultural R&D and training between Jordan, Palestinian Authority, Egypt, Morocco and Israel, and several Israeli scientists in all Israeli research institutions carry out joint research projects related to combating desertification, with scientists of countries neighboring to Israel. Bi-lateral R&D projects for combating desertification are carried out in several countries in Africa (e.g. Namibia), and Asia (e.g. India, China, Turkmenistan, Kazakhstan). Finally, in March 1997 a UNDP- supported international workshop on synergies between the three "Rio Conventions" (UNCCD, UNCBD and UNFCCC) was carried out by the BIDR in Sede Boqer, a workshop that triggered interest in the inter-relations between the subject matters of the Rio Conventions, and promoted joint cooperation in implementation of these conventions in years to come.

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CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

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 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The Ministry of the Environment, in collaboration with the Ministry of Agriculture, is responsible for issues related to agriculture and sustainable development, including long-term strategies at the national level; medium-term tactics at regional and district levels; and short-term operatives at regional, community and private levels. Pesticide control is governed by several legislative tools under the responsibility of different enforcement authorities: The Plant Protection Law, 1956, grants the Minister of Agriculture authority, following consultation with an advisory interdisciplinary committee, to regulate the import, sale, distribution and packaging of pesticides, fertilizers and other materials. The Animal Diseases Ordinance, designed to prevent the spread of animal diseases, is under the responsibility of the Minister of Agriculture. The Public Health Regulations dealing with pesticide residues in food were promulgated in 1991. The regulations, under the responsibility of the Minister of Health, establish standards for maximum permissible levels of pesticides in food products. The Hazardous Substances Law, 1993, which establishes, inter alia, Poison Permit requirements for all businesses dealing with hazardous materials. Water Regulations promulgated in 1991 prohibit the rinsing of sprayers of chemical and/or biological substances into water sources and forbid aerial spraying of such substances for agricultural purposes near a water source. The Public Health Ordinance of 1940 authorizes the Ministry of the Environment to eliminate nuisances from the confines of a local authority. The State of Israel has established a national policy on sustainable agriculture and rural development (SARD). This policy aims to deal with: Increasing environmental awareness in the rural sector and in related bodies; Freshwater supply: since Israel's freshwater potential will be targeted to the urban sector in the future, development of marginal water sources and wastewater will be essential in order to supply agricultural needs in the long term; Utilization of wastewater and sludge in agriculture should be based on potential risks to humans, soil, crops and water sources; Pesticide application. The secret of Israel's agricultural success lies in the close interaction between farmers and researches because, this strengthens their partnership in developing and applying sophisticated methods in all agricultural branches, as well as technological advancement, new irrigation techniques and innovative agro-mechanical equipment. Following this principle, the Ministry of the Environment believes that public participation is crucial to the sound development of sustainable agriculture and cooperates not only with other governmental ministries (such as the Ministry of Agriculture, Interior, Industry and Commerce, and Health) but also with local authorities, the private sector, academic institutions and scientists. In addition, in order to involve the public in the decision-making process, people of the agricultural sector are taking an important and direct part in several countrywide projects. For example, in a project concerning the environmental nuisances caused by geese fattening, representatives from the dairy-farming sector have been actively involved.

Programmes and Projects: Several agriculture development projects have been carried out in Israel, one of them is dealing with a supervised collection and reuse of dairy-farming manure (on the Hula Valley). Another project deals with integrated pest management and control in agriculture. Some 200,000 hectares of land are sprayed from the air each year. The Ministry of the Environment's inspectors supervise the operations of Israel's four crop spraying companies to ensure that they do not pollute drainage canals, streams, roads and residential areas. Supervision of ground spraying is more difficult due to the sheer magnitude of ground spraying which encompasses both individual farmers and numerous companies throughout the country. The "Greener Upper Galilee Project" is a project in which government ministries, local authorities and farmers themselves have banded together in order to tackle such issues as sewage and waste, pesticides and fertilizers, environment-friendly agriculture and education and information. Within this framework, a comprehensive survey of all sources of organic waste in the region was conducted and solutions were recommended for manure collection and recycling from dairy farms.

Status: Agriculture plays an important part in Israel's economy, representing some 1.9% of the GNP and 7.5% of the country's total exports in 1996. Since Israel attained its independence in 1948, the total area under cultivation has increased from 165,000 hectares to approximately 437,000 hectares, and irrigated land has increased by a factor of 8 to 240,000 hectares. During the same period, agricultural production has expanded 16-fold, more than three times the population growth. Approximately thirty percent of the total population in the rural areas is employed in agriculture. The general trend in rural areas includes a declining effective labor power working in agriculture and increasing non-agricultural entrepreneurship (from a low percentage to approximately 10% today, with projected

increases for the future). The structure of production in Israel includes the “Moshave,” which is a private community with cooperative activities; the “Kibutz,” full cooperative farming; and a regular system of private farmers. Agricultural planning from an environmental perspective must emphasize the sustainable use of non-renewable production factors, which are in short supply in Israel: namely, water and soil.

Capacity-Building, Education, Training and Awareness-Raising: One of the most significant changes in raising awareness about agriculture and sustainable development is the introduction of periodical statistics, which attempt to cover and understand the major trends relating to change in the rural structure, particular as it relates to the shift beyond agriculture, from traditional farming to developed entrepreneurship. Awareness of the potentially grave repercussions of agricultural practices has only recently emerged and with it the new discipline of agro-ecology. Raising the environmental awareness of farmers, initiating research and development to find technological solutions to problems, and financial aid for environment-friendly projects are primary aims of the Environment Ministry. The Ministry operates according to a holistic approach, which seeks to reduce the negative impacts of agriculture on the environment and advance sustainable agricultural development.

Information: The Beer Tuvia Regional Council, Israel's largest center for milk production, a comprehensive survey and master plan on treatment of solid and liquid waste originating in dairy farms was prepared in order to reduce environmental nuisances and protect precious groundwater sources in this sensitive region from contamination. These and other master plans will provide the foundation for a comprehensive database on pollution levels in the rural sector, in general, and on pollution from dairy farms, in particular. The integration of these data in a Geographical Information System will facilitate informed decision making on this important subject.

Research and Technologies: Regarding livestock pollution, experts are hard at work finding innovative solutions—disposal into sealed pools and recycling and reuse technologies, utilizing additives along with the wastes themselves. The advantages of waste and wastewater recycling, when conducted according to strict environmental guidelines, are clear: agricultural irrigation, savings in the purchase and use of synthetic fertilizers, enrichment of the soil with organic material and a low-cost solution to environmental nuisances. At present, several researches and projects are conducted in order to get the data on the impacts of pesticide use on water quality in the region overlying the coastal aquifer.

Financing: The Ministry of the Environment has granted financial aid to a number of regional councils for setting up regional collection and disposal networks to monitor expired pesticides which are unsuitable for use, extremely toxic, and require disposal to the national site for disposal and treatment of hazardous waste at Ramat Hovav. Financial assistance has been offered to farmers for purchasing rinsing facilities for empty pesticide containers which pose yet another hazard. Also, the Ministry of the Environment initiated the establishment of an Administration on Environmental Investments in Agriculture, with the participation of the Ministries of the Environment and Agriculture, which provides financial grants at a rate of up to 30% of the environmental investment.

Cooperation: An example of integrated pest management project that is conducted in Israel with the support of the United States is the project launched in the Beit She'an Valley in the wake of the Middle East multilateral peace talks in 1994. The project, which includes representatives of Israel, Jordan, Egypt, the Palestinian Authority and the USA, aims to better define the extent of adverse effects of pesticides on health in the Middle East region, to promote the safe use of agricultural chemicals and to assure effective pesticide management practices. An important element of the project is the establishment of a sophisticated laboratory for monitoring pest resistance to pesticides.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: The Ministry of the Environment is responsible for the implementation of the Convention on Biological Diversity, and is the main authority for nature protection in Israel. The Ministries of Education, Agriculture, and Interior have limited authorities on related issues. The Nature Reserves Authority and the National Parks Authority, both acting under the Ministry of the Environment, are the main authorities for carrying out nature protection policies. The Nature Reserves Authority is the scientific advisory body in Israel for the Convention on Biological Diversity. The Jewish National fund and Israel's leading environmental non-governmental organization, the Society for the Protection of Nature in Israel, are other major groups centrally involved in biodiversity issues. Following the second meeting of the parties to the Convention on Biological Diversity, Israel set out a series of steps to be taken for the purpose of preparing a national strategy plan for the conservation of biological diversity. Some are as follows: (1) The establishment of an inter-ministerial committee comprised of representatives of the Ministries of Environment, Agriculture, Interior, Science, Trade and Industry, Transport, Defense and Education; (2) the integration of conservation of biological diversity into environmental planning; (3) the preparation of guidelines for the protection of biological diversity which will constitute part of the Ministry of Environment guidelines for the preparation of Environmental Impact Statements; and (4) the allocation of priority to research proposals on the conservation of biological diversity to be partly financed by the Ministry of the Environment. In 1993, a National Outline Scheme for Forestation was approved to designate 160,000 hectares for the development and conservation of forestlands in Israel. The plan, implemented by the Jewish National Fund, calls for the planting of 200 million trees in an area of 81,000 hectares.

Cooperation: Israel ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora in March 1980, and the Convention on Biological Diversity was ratified in 1995. The Nature Reserves Authority (NRA) oversees Israel's 155 nature reserves, covering 33.5 thousand hectares of protected areas. One area in Israel - Mount Carmel - has recently been declared a biosphere reserve within the framework of the UNESCO Man and Biosphere programme. At the regional level, within the framework of the multilateral Middle East peace talks on the environment, the successful Gulf of Aqaba project has been developed. The project establishes a Jordanian-Egyptian-Israeli Oil Contingency Spill Plan for the Gulf of Aqaba/Eilat in order to protect the eco-system and the unique natural asset that the Gulf itself constitutes. Biodiversity protection in the desert region on a regional level is part of the wider desertification project involving Tunisia, Egypt, Jordan, Israel and the Palestinian Authority, within the multilateral framework. In March 1997, Israel hosted an international workshop dealing with three important international conventions - the Convention to Combat Desertification, the Biological Diversity Convention and the Climate Change Convention.

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CHAPTERS 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

Decision-Making:

Technologies: No information available.

Biotechnologies: The Ministry of Agriculture, specifically the Division of Plant Protection, established an inter-ministerial and inter-disciplinary committee on bio-safety, biotechnology/gene technology in December 1996. The Nature Reserves Authority is one of the professional bodies involved in the Committee, which also has representatives from universities and research centers, the Ministry of Science, and the Ministry of Trade and Industry. The committee will deal with recommendations for necessary legislative changes regarding bio-safety, taking into consideration the Convention on Biological Diversity, among other issues.

Programmes and Projects:

Technologies: Environmental research is an essential tool for formulating the Ministry of the Environment's policy. The Ministry leads national environmental research through the Office of the Chief Scientist. In 1997, the Ministry funded 56 research projects and surveys. The Ministry conducts epidemiological health surveys, monitors and studies water and air pollutants and operates a national environmental laboratory.

Biotechnologies: No information available.

Status:

Technologies: Israel is regarded as a world leader in the field of low cost environmental technology. Research has led to the development of many technologies in the areas of water conservation and recycling, treatment of wastewater, desalination, desertification prevention and solar energy. The Ministry of the Environment, together with the Ministry of Trade and Industry, the Manufacturers' Association and the Israel Export Institute, is establishing a strategy to bring Israeli environmental technologies to the international market.

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: Several scientific institutes and universities, together with industry and certain government ministries, are involved in biotechnology research. Some public funding is available from both the Ministry of the Environment and the Ministry of Science for research endeavors in the field.

Cooperation:

Technologies: The Ministry of the Environment, in cooperation with the Ministry of Foreign Affairs, offers and arranges an international course in environmental management, which is given every other year. Administrators and scientists from over 20 countries have attended this course

Biotechnologies: No information available.

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: The Marine and Coastal Environment Division of the Ministry of the Environment is the national authority responsible for all aspects of marine and coastal pollution. Other groups involved include the Ministry of Transport, Shipping and Ports Administration, non-governmental organizations (Israel Union Environmental Defense, Greenpeace-Israel) and local authorities. The Marine and Coastal Environment Division has adopted a multi-faceted working plan consisting of detection of environmental problems along Israel's marine coastlines and territorial waters; prevention and abatement of all types of marine pollution; enforcement of national laws related to protection of the marine environment; updating of relevant legislation in accordance with international conventions and modern environmental criteria. The Ministry of the Environment is developing a comprehensive national oil spill contingency plan. According to this contingency plan, an ad hoc emergency headquarters will be set up in case of an oil spill. The headquarters will be commanded by the Shipping and Ports Authority, and will include representatives from the Ministry of Environment, Ports Authority, Israel Defense Forces, Coast Guard and local authorities. In 1983, Israel approved a National Outline Scheme for the Mediterranean Coast with full consideration of environmental issues. The Scheme protects open space along large sections of the coastline, including nature reserves, national parks and coastal reserves. It also includes a highly effective clause prohibiting development within 100 meters of the coastline. Through a progressive GIS, the Ministry of the Environment is developing a Mediterranean Coast database, as well as a database for microbial and heavy metal monitoring stations along the Mediterranean Coast.

Programmes and Projects: Greenpeace opened an office in Israel in 1995 and decided to initially focus an environmental campaign against pollution of the Mediterranean Sea. Today, it is one of the fastest growing NGOs in Israel.

Research and Technologies: Research efforts at various academic institutions, in conjunction with industry experts, have been made regarding marine clean-up and pollution treatment by means of oil-eating bacteria. Bioremediation has also been successfully developed and used in a number of cases in recent years.

Financing: Funds for combating marine and coastal pollution for clean-up operations are generated by the Marine Pollution Fund, totaling approximately \$2 million annually. Income is derived from fees imposed on all oil terminals and ships calling at Israeli ports and from fines collected from violators of marine pollution prevention laws and regulations.

Cooperation: Israel ratified the 1976 Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution and its related protocols and the Convention for the Prevention of Pollution from Ships 1973 and the 1978 Protocol (MARPOL 73/78) with Annexes 1 and 2. Efforts are currently underway to ratify Annexes 3,4 and 5 of MARPOL 73/78 as well as the 1993 Oil Pollution Responsibility and Cooperation Convention (OPRC) and international agreements for compensation in case of large-scale accidents - Civil Liability Convention and IOPCF (Fund) Convention. In November 1996, an Agreement relative to the Coastal Areas Management Programme for Israel was signed between the UNEP Mediterranean Action Plan and Israel, for an intensive programme of coastal zone management. Israel is an active participant in the UNEP Mediterranean Action Plan (MAP), which provides an important forum for regional environmental activities and cooperation to protect the Mediterranean Sea. Committed to the objectives of the Barcelona Convention, Israel signed a tri-lateral Sub regional Contingency Plan for combating major marine pollution incidents affecting the territorial sea, coasts and other related interests of Cyprus, Egypt and Israel in June 1995. Furthermore, subsequent to the Peace Treaty signed between Israel and Jordan on October 26, 1994, an Agreement on Special Arrangements for Aqaba and Eliat was concluded between the two countries in January 1996 with specific sections dealing with coordinated efforts for environmental protection in the Eliat/Aqaba area.

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

Decision-Making: Israel's priority in this issue is the long-term conservation of water resources and extended reuse of wastewater. The following five areas comprise Israel's primary water policy objectives: *Drinking Water Quality*. The Water Commission has initiated a project for rapid sand filtration of drinking water, which aims to reduce the water turbidity level to less than 0.5 NTU which is the acceptable standard in the E.U; *Water Conservation*. A national campaign is being sponsored by the Water Commission, in which the use of water conservation devices at the household level is promoted; *Water Demand Management*. The Water Commission is introducing a shift from the traditional management of the supply side to the demand side. Water demand management is emphasized, combining certain measures which include: progressive water charges, price incentives for water reuse, public participation, water systems improvement, and introduction of advanced technologies in order to institutionalize sustainable use of water throughout; *Water Resources Protection*. The Water Commission adopted an overall policy for the safeguarding of water resources. The major principle is to use the best technology and best practice in industry, agriculture, and society in order to minimize the pollution of water resources; *Water Resources Monitoring*. The state of available water resources is continuously monitored by the Hydrological Service Department of the Water Commission. Annual and periodical Reports are used to influence the planning process and to control development projects. A water resources conservation map, restricting land use to activities that are not harmful to water resources, has been produced and considered in land use planning.

Programmes and Projects: No information available.

Status: public waterworks, supplying a per capita average of 90 cu.m/year, serves all Israeli settlements. Similarly, 94% of the generated wastewater is drained to a public sewer and 80% is treated in biological treatment plants. Only 14% of the generated wastewater is drained without treatment to watercourses, while 42% is reused for irrigation after secondary or advanced tertiary treatment. A national plan to increase the reuse of treated effluent for irrigation is being implemented, with a reuse target of 65-70% of the generated wastewater.

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

Decision-Making: The issues involved in toxic chemicals are the responsibility of several bodies, including the Ministries of Environment, Agriculture, Industry and Trade, Health, Internal Security, and Defense, in addition to Customs, the police force, fire and rescue services, Israel Red Cross and the Home Front Command. The Hazardous Substances Law, 1993, provides the Ministry of the Environment with authority for the control of hazardous substances, including licensing, regulation and supervision of the various aspects of their production, use, handling, storage, marketing, import, export and transport. The Ministry of the Environment has invested major efforts in infrastructure for both implementation and enforcement of the law - the establishment of the permit system, discovery of the facilities requiring a permit and computerization of data. Efforts are being made to increase cooperation with customs officials to ensure that hazardous substances are not delivered to industries who do not have the requisite permit, or specific approval from the relevant authority.

Programmes and Projects: In a September 1993 decision, the Israeli government called for the establishment of a national contingency response system for chemical accidents, and allocated \$US 22.6 million towards the establishment and operation of such a system. Finances were allocated for the operation of the national contingency system and a two-pronged contingency plan was established, consisting of an integrated action plan specifying the tasks of each body within the framework of the entire system.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: Within the framework of the School for Hazardous Substances-a preparatory course for hazardous materials; guidance on professional subjects.

Information: the Ministry of the Environment in 1994 in coordination with the existing Home Front Command Information Center established An Information Center on Hazardous Substances. The Information and Response Center supplies data on a 24-hour basis. The Center collects data on safety, detection, identification, alertness, treatment, neutralization procedures and risk assessment. In addition, the Center follows up on new developments in the area of legislation, regulation and restrictions, both worldwide and in Israel. It has also created an information collection system on all hazardous substance facilities, their location, obligations, status, substances held etc.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: The Ministries of the Environment and Agriculture have set up an ad-hoc committee to make the necessary domestic arrangements and examine the effects of joining an Internationally Legally Binding Instrument for the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC). Israel signed the Stockholm Convention on Persistent Organic Pollutants in 2001.

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CHAPTERS 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES

Decision-Making:

Hazardous Wastes: The main authority for dealing with hazardous wastes in Israel is the Ministry of the Environment, on both national and district levels. In addition, a few powers remain under the authority of the Ministry of Health. Licensing of Business Regulations on hazardous industrial plants was promulgated in 1993 and requires owners of industrial plants in which hazardous substances or wastes are stored, sold, processed or produced to take all necessary measures to treat these materials according to the best available technology, under a specific license (poison permit). Used Oil Regulations, under the Abatement of Nuisances Law, the Licensing of Businesses Law and the Water Law, came into effect in December 1993. The regulations call for the collection of used oil in specially designed receptacles for eventual disposal either to the Ramat Hovav Hazardous Waste Site or to a recycling facility.

Solid Wastes: The Ministry of the Environment, through its Solid Waste Division and District Offices and the local municipalities, is primarily responsible for solid waste management. Siting of landfills and other waste disposal locations is within the authority of local municipalities and subject to the Planning and Building Law and its regulations as well as the National Outline Scheme for Solid Waste Disposal. The Water Law of 1959 establishes the framework for the control and protection of Israel's water resources, authorizing the Ministry of the Environment with responsibility for preventing pollution of water resources. Other ministries, including the National Infrastructure Ministry through the National Water Commission, the Ministry of Agriculture and the Interior Ministry also share responsibility for the treatment of wastewater. The Collection and Disposal of Waste for Recycling Law was passed in June 1993. The law authorizes local authorities, and obliges them when so required by the Minister of the Environment, to allocate sites for recycling centers and to install recycling facilities and containers. In order to facilitate the adoption of relevant by-laws by local authorities, the Ministry of the Environment drafted a model by-law on the collection and disposal of waste for recycling. An important issue currently being reviewed is the disposal and treatment of sludge from municipal wastewater treatment plants. A Ministry of the Environment team has consolidated a policy that would require sewage treatment plants to treat the sludge to a point where it will not cause odors or attract insects. Some 30-50% of the sludge will then be used as fertilizer, with the rest earmarked for landfill disposal.

Radioactive Wastes: Part of the responsibilities of the Ministry of the Environment's Radiation Division includes supervision of radioactive materials and radioactive waste facilities. The authority for low-level radioactive waste management in Israel is the radiation officer appointed by the Minister of the Environment under the Pharmacists Regulations on radioactive elements. The regulations authorize the officer to issue a license for waste disposal services, after consulting with the Israeli Atomic Energy Commission.

Programmes and Projects:

Hazardous Wastes: An initiative offering support to industry in the reduction of hazardous waste. The Standards Committee for Hazardous Waste accorded greater priority to the treatment of hazardous waste (reduction at source etc).

Solid Wastes: Of the total volume of municipal wastewater produced in Israel, about 90% is collected by means of central sewage systems; 80% is treated; and nearly 70% is reclaimed for reuse, mainly for irrigation of non-food crops and animal fodder. By the year 2000, recycled wastewater is expected to provide up to 400 MCM of water per year for agricultural purposes. During the last three years, a major drive has been carried out to build new, modern treatment plants for most of Israel's major cities - Jerusalem, Haifa, Netanya and Hadera.

Radioactive Wastes: No information available.

Status:

Hazardous Wastes: Total hazardous waste collected in 2000: 270 772 tons. Out of this, 156 429 tons were transferred for re-use; 32 129 tons were transferred for recycling; 67 585 tons were taken for treatment at the hazardous waste facility in Ramat Hovav; and 14 629 tons were taken for treatment outside of the Ramat Hovav framework.

Solid Wastes: Because of a combination of severe water shortage, contamination of water resources, densely populated urban areas and intensive irrigation in agriculture, wastewater treatment and reuse is high on Israel's list of national priorities. Effluents constitute the most readily available and cheapest source of additional water, and provide a partial solution to Israel's water scarcity problem.

Radioactive Wastes: No information available.

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

Hazardous Wastes: Courses within the framework of the School for Hazardous Substances.

Solid Wastes: No information available.

Radioactive Wastes: No information available.

Information:

Hazardous Wastes: No information available.

Solid Wastes: No information available.

Radioactive Wastes: No information available.

Research and Technologies:

Hazardous Wastes: No information available.

Solid Wastes: No information available.

Radioactive Wastes: The Nuclear Research Center in the Negev operates and monitors Israel's only national disposal site for radioactive waste. The Ministry of the Environment operates a computerized database management system on radioactive materials, with data on licensing, import and distribution, waste disposal and transportation. Supervision of the disposal of radioactive waste has improved recently, and a report was prepared based on the number of drums containing radioactive waste that were transferred from all institutions in Israel to the national disposal site in the Negev. Within the framework of the advisory committee on radiation, a report on waste disposal and treatment procedures has also been prepared.

Financing:

Hazardous Wastes: Waste reduction initiative to aid industry.

Solid Wastes: No information available.

Radioactive Wastes: No information available.

Cooperation:

Hazardous Wastes: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was signed in 1989 and ratified in 1994. The latest information was provided to the Basel Convention Secretariat in 1999. In compliance with the requirements of the Convention, the Ministry of the Environment promulgated regulations, under the Hazardous Substances Law, dealing with the import and export of hazardous wastes. Israel is currently reviewing disposal and treatment options for other types of problematic wastes, such as medical waste. A joint committee of the Ministries of the Environment and Health, working according to guidelines on biological waste set by the World Health Organization, has called for the establishment of 15-20 regional disposal centers at main hospitals throughout the country.

Solid wastes: International cooperation has played an important role in Israel's management of both solid waste and sewage treatment. Bilateral cooperation between Sweden and Israel focused in 1995-1996 on the issue of solid waste management. Bilateral cooperation with Turkey and Egypt has focused on the issue of wastewater treatment and management. Within the multilateral working group on the environment, a regional workshop was held, hosted by Italy, on solid waste management, and attention has been given to the issue of wastewater treatment within the multilateral working group on water. A major part of the cooperative action in the field of the environment between Israel and Palestinian Authority focuses on the two issues of solid waste management and wastewater management and treatment.

Radioactive Wastes: No information available.

CHAPTER 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-Making: Legislation and Regulations: On October 3rd 1991, Israel signed the convention on the Elimination of all Forms of Discrimination against Women (CEDAW), which is monitored by the Committee on the Elimination of Discrimination against Women. Status: More than 100 laws relate, directly or indirectly, to the advancement of the status of women. Taken together, they encompass nearly all aspects of women's lives and provide an excellent legal foundation for gender equality. In 1996, the Knesset Committee on the Advancement of the Status of Women became a permanent (statutory) committee. In March 1998, marking International Women's Day, the Knesset voted unanimously to establish the Authority for the Advancement of the Status of Women. Some of the major legislations: The first important piece of legislation regarding the status of women was the Equal Rights for Women Law that passed in 1951. The law went a long way towards ensuring the legal equality of women in Israel, though it was unable to prevent certain inequalities stemming from the Jewish *Halacha*. The Supreme Court in Israel declared it as "an ideological law, revolutionary, and a change of social structure". Amendment No 2 to the Equal Rights for Women Law was passed on March 29, 2000. The purpose of this law is to prescribe principles that will guarantee full equality between women and men, in the spirit of the principles in the Proclamation of the Establishment of the State of Israel. The amendment deals, inter alia, with equal social rights for women in all spheres of life, the right of women over their bodies, protection against violence, and trafficking in women, and appropriate mandatory representation for women in the public sector. Even though the law is primarily declaratory by nature, it is regarded as a major victory for the principle of equality, and in the future will serve as a basis for court decisions and practical demands. The Equal Retirement Age Law of 1987 prohibits employers to force an early retirement on women employees. The Equal Employment Opportunities Law of 1988, and its amendments, strengthen the non-discrimination provisions of the 1959 Civil Service Law, and prohibit discrimination on the basis of gender and sexual orientation. In 1991, the Prevention of Domestic Violence Law was passed. Since the latter half of 1992, legislation concerning the status of women often reaches the Committee for the Advancement of the Status of Women in the committee stage for the enactment. The first piece of legislation that introduced affirmative action in favor of women was the 1993 amendment to the Government Corporations Law of 1975 that provided for the mandatory appointment of women to the boards of directors of every government corporation. The law has been extremely successful, and whereas in 1993 the representation of women on boards of directors of government was only 7%, at 2000 38% of women were serving such boards. The amendment of the Government Corporations Law was followed by amendment No 7 to the Civil Service Law, which was passed in 1995. This amendment deals with appropriate representation for women in appointments to senior positions in the civil service. In 1996 a new and progressive version of the Equal Pay (male and female employees) Law was tabled by the Parliament. The new law is provided for the prevention of discrimination in pay between men and women performing the same job. Information: Women's organizations have long stood at the vanguard of environmental activism in Israel, both individually and collectively. Within the Ministry of the Environment, 52.5% of the permanent employees are women. For three consecutive years, the ministry was awarded the government prize for "most advanced ministry in the employment of women" both in terms of the percentage of women employed and in terms of the high positions they hold. Two women have served as Ministers of the Environment and a woman has served as director general. Today, women hold half of the deputy director-general positions, and several women have been appointed as directors of professional departments and as directors of regional offices of the Ministry of the Environment.

Children and Youth: Decision-Making: Legislation and Regulations: On October 3rd 1991, Israel signed the Convention on the Rights of the Child (CRC), and on November 2nd 1991 ratified it. Children and youth are exposed to environmental programmes at all levels of the formal school system and take part in environmental activities promoted by the country's governmental and non-governmental organizations. Capacity-Building, Education, Training and Awareness-Raising: On September 1949, the Israeli Parliament adopted the Free Compulsory Education Law. Several amendments have been done during the years, especially in the last decade, to strengthen this legislation, and to adjust it to different communities, like handicapped children, children from families blessed with children, and more. Efforts are invested on fostering environmental responsibility among the country's youth, with special emphasis on kindergartens and on the first four years of elementary school as a means

of instilling behavioral patterns. In the lower grades, the focus is on the immediate environment of the students – school, neighborhood, industry, gardens and parks. Responsibility for the immediate environment is expected to lead to responsibility for the larger environment-community, city, country and world. High schools specializing in environmental studies have also emerged in recent years. The idea is to integrate scientific thought and creative perception and association with practical action on behalf of the physical and human environment. To ensure that the educational system at all levels takes part in environmental commitment programmes, the Ministry of the Environment has launched an “Adopt a Site” project. Within this framework educational institutes, youth movements and community centers adopt sites in their immediate surroundings and nurture them. Sites may include national monuments, open spaces, public gardens, sections of rivers, etc. The Society for the Protection of Nature in Israel, Israel’s foremost non-governmental environmental organization, maintains field schools, urban nature centers and local branches. Every year, it reaches thousands of children and youth through its educational trips, courses, training programmes, public campaigns and publications. Field Study Centers are often located in under-privileged areas where extra educational opportunities are particularly important. These centers provide schools with enrichment programmes in nature and environmental education, on the one hand, and serve as community centers, on the other. The SPNI also operates Orienteering Clubs that reach more than 3,500 teenagers. In 1998, the Heschel Center teamed together with Project Involvement to launch the Green Network - a network of schools committed to actualizing a new vision of environmental education. The Green Network links schools and community groups across the country by engaging them in meaningful environmental learning and supporting action in their local communities. Seven students from Green Network schools participated in the UNEP International Children’s Conference on the Environment in England. The students intend to set up a forum of Student Environmental Leaders and, with the support of teachers of the Green Network, will put together a Youth Leadership Conference.

Non-governmental Organizations: Status: The 1990s witnessed a dramatic increase in the number of non-governmental environmental organizations in Israel. About 160 organizations have been established to deal with both national and local issues, up from only three in the beginning of the decade and 80 in 1999. They are funded by charitable funds that operate in Israel and internationally. These organizations help to advance environmental activities in all areas – from promotion of better public transport, to protection of open space and the coastlines, to public participation in planning and decision-making, to advancement of environmental justice. Programmes and Projects: While lack of space precludes the possibility of surveying all of the country’s environmental NGOs, following is a short description of some prominent organizations.

Life and Environment: Established in 1975, Life and Environment serves as an umbrella organization to coordinate environmental activities among non-governmental organizations while avoiding duplication and building partnerships. At the time of its establishment, Life and Environment included ten national bodies; today this number has more than tripled to include 65 diverse NGOs and 20 observer groups, working in the environmental field.

Society for the Protection of Nature in Israel: The Society for the Protection of Nature in Israel (SPNI) is Israel’s largest membership environmental organization, with more than 60,000 individual and family members from a broad geographic, social and political spectrum. As a public representative on the National Planning and Building Board, the SPNI has also been a strong advocate of environmental interests. Its activities have been backed up by public protest and legal action, including petitions to the High Court of Justice. In recognition of its achievements, the SPNI was awarded the United Nations Global 500 Award at the Rio Earth Summit “in recognition of outstanding achievement in the protection and improvement of the environment.”

Israel Union for Environmental Defense: The Israel Union for Environmental Defense (IUED) was established in 1990 as the leading environmental advocacy group in Israel. It uses the courts, independent scientific analysis and public campaigns to address national environmental issues. IUED has received legal standing under a number of laws to represent the public in court on environmental issues. In addition, its staff members serve as consultants in Knesset committee hearings, government meetings and public commissions dealing with environmental protection.

The Heschel Center for Environmental Learning and Leadership: This organization was founded to help foster an emerging environmental vision for Israeli society, through the development of a dynamic, interactive center dedicated to the teaching and networking of an environmental leadership. The Center places special emphasis on

developing sustainable approaches among professionals in different fields, including architects and planners, the media, and educators.

Israel Economic Forum on the Environment: Established in 1991, the aim of the Forum is to increase environmental awareness within the business community, to deepen industry's involvement in the advancement of environmental quality, to minimize the environmental impacts of industrial operations and to help industry and business to reconcile the conflict between development and environment. The Forum encourages industry, agriculture, transport and other economic sectors to incorporate environmental concerns into their socio-economic development planning, alongside economic and operational concerns. At the time of its establishment, the Forum included 30 businesspeople, representing major industrial, commercial and economic organizations and industries. Today, its numbers have increased to 200 leading economic bodies.

Green Course: This organization, set up in 1997, is the only nationwide student environmental organization to exist on the national level. The group includes nearly a thousand campus members on all major university and college campuses around the country.

Friends of the Earth Middle East: Egyptian, Jordanian, Palestinian and Israeli environmentalists founded this umbrella organization, representing leading environmental non-governmental organizations in the Middle East, under the name EcoPeace in December 1994. Its primary objectives are to protect the environmental heritage, promote sustainable development and create the necessary conditions for lasting peace. It is involved in assessing and monitoring environmental implications of projects or activities in the region that are likely to have significant trans boundary impacts and to addressing common regional environmental issues through effective coordination among environmental NGOs.

Forum of Organizations on Quality of Life and the Environment: This Forum, first founded in 1989 within the framework of the National Council for Voluntarism in Israel, now includes more than 90 organizations, immigrant groups, and volunteers in local authorities and the Arab sector. It is dedicated to fostering voluntarism in the environmental realm.

Local Authorities: Decision-Making: Legislation and Regulations: Local authorities are the main suppliers of environmental services to the population. To improve environmental services on the local level, municipal environmental units were established in 1977, under the administrative jurisdiction of their respective municipalities but under the professional authority of the Ministry of the Environment. Since many environmental problems cross municipal borders, cooperation between local authorities has been increased in such matters as waste and sewage disposal and treatment, air pollution and noise. However, much more is still to be done with respect to cooperation and coordination between local authorities. Numerous local authorities have banded together within the framework of town associations for the environment. Municipal environmental units currently serve about 80% of the population. They have played an important part in raising public awareness of environmental issues.

Status: Local Agenda 21s are beginning to be promoted in different localities throughout the country. To spearhead initiatives of local authorities in support of Agenda 21, the Heschel Center (an NGO) sent a group of ten people to a European conference for sustainable city initiatives. The Center is currently recruiting five small to mid-sized municipalities, representing the cultural diversity of Israel, to launch Local Agenda 21 sustainability initiatives. The project is in cooperation with the Ministries of Environment and Housing. In addition, Israel's Healthy Cities Network has committed itself to transform the vision of "Health for All" into reality in the 21st century by adopting the principles of Health 21 and Local Agenda 21.

Business and Industry: Decision-Making: The Manufacturers Association represents about 1700 industrial plants, which constitute about 90% of all industry in Israel. One of its divisions is responsible for environmental issues. Environmental activity is structured through committees consisting of directors of major industries: a General Committee for the Environment and Subcommittees on Hazardous Materials, Air Emissions, Industrial Effluents, Recycling and Packaging, Environmental Management and ISO 14001 (Environmental Management Systems). The environmental committee of the Chemical, Pharmaceutical and Ecology Division deals with environmental issues related to cleaner production. The committee also represents industry in the Knesset (Israeli Parliament) and in government bodies that deal with the subject, including the Ministry of Environment. It informs members about laws, regulations and environmentally sound manufacturing processes and seeks to promote cleaner production

processes. **Programmes and Projects:** In 2001, the Ministry of the Environment and the Manufacturers Association established a Cleaner Production Center whose aim is to advance awareness, extend knowledge, increase capacity and promote instruction, training and demonstration of cleaner production. In the first stage, the Center will collect data on such subjects as minimization of brine emissions, utilization of effluents from wastewater treatment plants in industry and savings in potable water, and reduction of non-hazardous waste at source and use of industrial waste heat. In 1997, ISO 14001 (Environmental Management Systems) was adopted by the Standards Institution. Dozens of companies have received ISO 14001 accreditation. The Ministry of the Environment has provided industries with ISO 14001 accreditation or in the process of accreditation with financial incentives to conduct surveys to identify possibilities for technological changes which will increase environmental quality and eco-efficiency while generating economic profits. M.A.A.L.A. (Business for Social Responsibility) was established in 1998 with the aim of increasing awareness of the importance of social involvement on the part of the business sector.

Scientific and Technological Community: Status: The advancement of science, technology and academic education is an important tenet of Israel's scientific policy. Courses and programmes on environmental subjects are offered at each of the country's universities to assure a pool of professionals and researchers, capable of environmental problem solving and able to influence policy and decision making at all levels. **Decision-Making:** Individual researchers and scientists take part in professional forums on policy and decision making in different areas of the environment. The Ministry of the Environment publishes the results of environmental research studies that it funds for dissemination among the general public and decision-makers. Universities have played an important role in the development of environmental technologies. The establishment of science-based industrial parks adjacent to university campuses has been pioneered with significant commercial success. Universities have also set up "spin-off" industrial firms for the commercialization of specific products based on their research, often in partnership with local and foreign concerns. An International Exhibition for Environmental Technologies was organized in Israel in May 2001, with the participation of 200 companies. Central events included an exhibition of environmental technologies, developed in Israel and abroad, and environmental conferences. The Office of the Chief Scientist in the Ministry of Industry and Trade funds, *inter alia*, research whose aim is to develop technology or final products relating to the environment. It also runs programmes for the development of generic technology, in which consortia of academic and industrial researchers work together on pre-competitive research and development in such areas as high-temperature solar energy.

Farmers: Decision-Making: Legislation and Regulations: The Extension Service of the Ministry of Agriculture and Rural Development assists farmers by providing guidance and guidelines on the optimization of production means in different parts of the country, in accordance with their climatic and agricultural conditions. Ten district and regional extension offices provide agricultural guidance and advice, organize field visits and demonstrations, offer workshops and short courses, and extend guidance to individual farmers on their farms. The Agro-Ecology Division of the Ministry of the Environment seeks to raise the environmental awareness of farmers, to find technological solutions to problems and to provide financial aid for environment-friendly projects.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: There has been no attempt to introduce new environmental taxes, levies or charges, yet. No analysis to identify environmentally unsustainable subsidies has been carried out. There have been no new policies to make foreign direct investment (FDI) more environmentally friendly. The cooperation with the financial sector will enable the Ministry of the Environment to develop regulations and other tools, which are needed in order to encourage the inclusion of information on the environment in the capital market data-system and in investment projects that are being financed in Israel.

Programmes and Projects: The Division of Standards, Economic and Information of the Ministry of the Environment had initiated a long run project, including several initial steps which have been already taken in 1999, for the purpose of raising the inclusion of environmental consideration into the financial services' policies and practices.

Capacity-Building, Education, Training and Awareness-Raising: All the authorities related to the financial sector in Israel have been introduced to and presented with the above subject during 1999, for the purpose of raising awareness and initiating cooperation towards the inclusion of environmental consideration into their policies (for example: the Israeli Securities Authority, The Supervisor of Banks - Bank of Israel).

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: The following ministries coordinate most of the government-sponsored research on sustainable development: Ministry of Science, Culture and Sport; Ministry of the Environment; Ministry of Agriculture; Ministry of National Infrastructures. The science activities of these ministries are coordinated by their Chief Scientists. A Chief Scientists' Forum, operated by the Chief Scientist of the Ministry of Science, Culture and Sport, coordinates among the Chief Scientists of the individual ministries and reports to the government. A Ministerial Committee for Science and Technology, headed by the minister of Science, Culture and Sport, advises the government on scientific and technological issues.

Programmes and Projects: Several programmes and projects were developed to implement Agenda 21, most of them in the fields of biodiversity, climate change and sustainable development. *Biodiversity:* the Ministry of Science and the Ministry of Agriculture, as a coordinating body for Israel's decentralized plant genetic resource efforts, established The Israel Gene Bank (IGB) in 1979. The IGB is responsible for implementing a strategy for national genetic resource conservation. Israel has extensive natural history collections and is the only scientific center in the Middle East where intensive collecting, research and teaching in the natural sciences take place. The natural history collections of Tel Aviv University and the Hebrew University of Jerusalem serve as centers for taxonomic expertise and biodiversity research and have been recognized by the government as national information centers. *Climatic Changes:* As a party to the UN Framework Convention on Climate Change, Israel has prepared a national inventory of anthropogenic emissions and removals of greenhouse gases. It is taking part in a project entitled "Vulnerability of Water Resources due to Climate Change in East Mediterranean Ecosystems: an Integrated Approach to Sustainable Development" in cooperation with the German Federal Ministry of Education and Research (BBMF). *Sustainable Development:* The Ministry of the Environment, with the support of the Mediterranean Action Plan, initiated the preparation of a sustainable development strategy for Israel. As part of the project, seven target groups were assembled in the fields of industry, energy, transport, tourism, urban sector, agriculture and biodiversity.

Status: The advancement of science, technology and academic education is an important tenet of Israel's science policy. Government bodies channel funds to Israel's seven universities and institutes of higher learning for environmental research. Following are some of the major institutes dealing with environmental research: *Agricultural Research Organization:* coordinates most of the research activities of the Ministry of Agriculture by means of seven research institutes. Ben Gurion University of the Negev: the Jacob Blaustein Institute for Desert Research is a national center for desert research. The Hebrew University of Jerusalem: the Faculty of Agriculture, Food and Environmental Quality Sciences focuses on integrated pest management. The Weizmann Institute of Science: the Department of Environmental Sciences and Energy Research conducts research on hydrology, atmospheric research and climate and energy, particularly solar energy. Tel Aviv University: A Super-Center for Environmental and Ecological Studies was established to facilitate basic and applied research. Several government ministries administer centers for environmental research in specific fields. These include, among others, the Geological Institute and the Hydrological Service of the Ministry of National Infrastructures.

Capacity-Building, Education, Training and Awareness-Raising: The Ministry of Science, Culture and Sports has set up programmes aimed at capacity-building, including the following: Regional research and development centers to raise the research, scientific and education level in peripheral areas. Enrichment classes, science gardens, and scientific publications for youth and for the general public. Support of research by new immigrant scientists and scholarships to immigrant youth who are interested in science. The Ministry of Education runs programmes for high school matriculation examinations in environmental sciences and biology: *Environmental studies:* The basic programme provides an understanding of environmental concepts and focuses on an environmental subject in a location near the school. The more intensive programme includes a special project, called "ecotope", which involves fieldwork, observation, surveys and a paper. *Biology:* A "biotope" project is required which analyzes the interrelationships of organisms in a given ecosystem. *GLOBE:* In 1995, Israel joined the Global Learning and Observations to Benefit the Environment project. The project has been integrated into the curriculum of some 50 participating schools. The Environment and Education Ministries have initiated the establishment of teacher

training centers designed to help teachers guide and supervise students in their “ecotope” projects, to serve as lending centers of scientific equipment to schools, and to train students to use scientific equipment in the field. Students participate in workshops that provide basic knowledge of research methods, bibliographical instruction and familiarity with databases. Research and development are carried out primarily at seven universities and institutes of higher learning. During the 1990s, most major universities and colleges in Israel opened graduate or undergraduate level programmes in environmental studies and management, which assure a pool of professionals and researchers. Public awareness programmes are largely promoted by non-governmental organizations, foremost among which is the Society for the Protection of Nature in Israel. This organization reaches hundreds of thousands of children, youth and adults through its educational trips, courses, training programmes, public campaigns and publications. Major emphasis is placed on conservation of biodiversity.

Information: Both governmental and non-governmental organizations have collected data on environmental conditions in the country and have incorporated them into Geographic Information Systems (GIS). Databases and Geographical Information Systems (GIS) often accompany projects in the field of flora and fauna, hydrology and biosphere reserves. Sustainable development information includes the following: The Hebrew University of Jerusalem has launched BioGIS, a Geographical Information System established to create a national database of Israel’s flora and fauna. (www.biogis.huji.ac.il). The Israel Nature and National Parks Protection Authority has inaugurated an Internet site (www.natureinfo.org.il), which presents its animal and plant observation database. The Central Bureau of Statistics (www.cbs.gov.il) along with the Ministry of the Environment and other bodies has initiated the development of sustainability indicators that will communicate environmental information to the public and to decision makers. As part of the country’s land-use planning system, landscape sensitivity maps have been produced which characterize open spaces according to sensitivity and value criteria. Satellite-based remote sensing technologies have been used to improve methods of data collection, especially with regard to the sustainable development of the Mediterranean coast and open spaces throughout the country. Governmental and non-governmental organizations keep the population informed about environmental issues through Internet sites and booklets and brochures.

Research and Technologies: The main government ministries which fund sustainable development research include: The Ministry of Science, Culture and Sport which coordinates research on sustainability issues largely related to the hydrological cycle and biodiversity. The Ministry of National Infrastructures which carries out a wide variety of research, largely through centers of environmental research in such areas as sustainable use of marine resource, geology and water management. The Ministry of Agriculture which funds research on sustainable agriculture, soil and water management, and integrated pest management. The Ministry of the Environment which coordinates and funds environmental research and surveys in such areas as water and marine quality, waste, air, environmental economics, agro-ecology, hazardous materials, and the urban environment. An International Exhibition for Environmental Technologies was organized in Israel in May 2001. Israeli scientists have developed innovative technologies in such fields as recycling and reuse of water for agriculture, drip-irrigation systems, water desalination, exploitation of solar, geothermal and residual energies. Universities have played an important role in the development of environmental technologies. The establishment of science-based industrial parks adjacent to university campuses has been pioneered with commercial success. Universities have also set up “spin-off” industrial firms for the commercialization of specific products based on their research, often in partnership with local and foreign concerns.

Financing: Research activities are financed by the national budget. The amount spent on research and development in relation to the Gross Domestic Product is parallel to other small developed countries. Since increasing research costs cannot be covered by the national budget alone, Israeli researchers often turn to external grants programmes to bridge the gap. Some research is carried out with the aid of foreign donors and requires partnerships with scientists in other countries (see below).

Cooperation: Environmental research studies are carried out within the framework of research and development agreements with North America, Europe and Asia as well as bilateral agreements with countries throughout the world.

Following are some of the major frameworks for cooperation in the area of sustainable development: United States-Israel Science and Technology Commission; US-Israel Binational Science Foundation; US-Israel Binational Agricultural Research and Development Fund; German-Israel Foundation for Scientific Research and Development; Fifth Framework Programme as part of the Agreement on Scientific and Technical Cooperation between Israel and the European Union; Man & Biosphere Programme and International Hydrology Programme of UNESCO; Commission on Plant Genetic Resources within the framework of the FAO; Combating desertification initiatives within the framework of UNDP

Israeli delegations have participated in negotiations leading to global agreements such as the UN Framework Convention on Climate Change, the Convention on Biological Diversity, the UN Convention to Combat Desertification, the Convention for the Protection of the Mediterranean Sea against Pollution and its protocols and many others. Israel has signed and ratified nearly all of the major environmental agreements and participates in the activities of the Mediterranean Commission on Sustainable Development.

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CHAPTER 36: EDUCATION

Decision-Making: Coordinating Bodies: The following are primarily responsible for activities under this chapter: the Ministry of Education, the Ministry of Environment, and the Ministry for Culture, Science and Sports. To this coordinating body gather other non-governmental bodies, some of them are mentioned below. The Ministry of Education is responsible for the educational system in Israel. At all levels, textbooks and workbooks adhere to the principles of environmental education and include background material, concrete tasks for performance in the field, research, and conclusions.

Decision-Making: Major Groups involvement: Education and public awareness programmes are largely promoted by non-governmental organizations, foremost among which is the Society for the Protection of Nature in Israel (SPNI). Every year, this organization reaches hundreds of thousands of children, youth and adults through its educational trips, courses, training programmes, public campaigns and publications.

Decision-Making: Strategies, Policies and Plans: One of the Ministry of the Environment's major aims is to educate a new generation of Israelis to be aware, responsible and willing to protect the environment. To implement this policy, the Education and Information Division of the Ministry has produced environmental curricula, information booklets, films and slides, and has organized environmental projects, cleanup campaigns and other environmental events. The Ministry operates an information center for teachers, students and the general public, and provides booklets and teaching aids on environmental subjects. In line with its policy of broadening the dissemination of environmental education and information, the Ministry of the Environment established environmental education centers within the framework of environmental units in municipalities. Today, 34 local environmental education and information centers, as well as 6 regional centers, operate throughout the country, serving as focal points for community environmental activities. They assist the formal education system in planning and preparing environmental curricula, conduct in-service teacher training programmes, help introduce new approaches, provide educational material, and promote informal education and initiate environmental events. To help incorporate environmental education concepts into the school curriculum, the Ministry of the Environment has set up Environmental Education Centers within the framework of municipal environmental units. The centers assist the formal education system in planning and preparing environmental curricula (in conjunction with local teachers), conduct in-service teacher training programmes, and support the introduction of innovative educational approaches. They provide educational material for both teachers and interested citizens, promote informal environmental education by stimulating public involvement, initiate and coordinate lectures, seminars, environmental tours and training courses, and promote environmental events

Capacity-Building, Education, Training and Awareness-Raising: The Council for a Beautiful Israel (CBI), founded in 1968 by decree of the Knesset's Interior Committee, functions as a public non-profit organization in cooperation with governmental as well as public bodies. It is a unique association of volunteers and professionals working together to safeguard develop and beautify the environment and enhance the quality of life of the people of Israel. The Center for Environmental Studies is the educational arm of the Council for a Beautiful Israel, founded to teach young and old how to safeguard and develop the environment, preserve the physical heritage and enhance the quality of life for all Israelis. Through courses that teach various subjects, from rational urban planning, gardening and landscaping to natural resources conservation and pollution prevention, the Center reaches into the community to plant the seeds of environmental concern and action. Since its inception, the Council, with the help of thousands of volunteers, has worked to protect Israel's natural beauty and to raise environmental consciousness amongst Israelis of all ages. Over the years the Council has become an influential factor by deepening the public's awareness of the surroundings and has turned quality of life and the environment into a hot issue not easily avoided. A recent survey of Environmental Education in Israel, carried out by the Heschel Center (an NGO) (A report on Environmental Education in Israel by Eilon Schwartz) has shown that Environmental Education in Israel has been largely dominated by two main paradigms: that of nature preservation and that of environmental sciences. The first, concentrates on "knowing the land" - appreciation and understanding of the fauna and flora of Israel. What most characterize this model are experiential education and an understanding that nature is a source of spirit and has worth apart from human evaluation. The second educational model focuses human society, rather than nature and concentrates on giving students environmental scientific literacy. Here, topics such as air and water pollution, hazardous waste and other issues of public health are studied. Both models together do supply some of the needed

elements in an Environmental Education curriculum: nature appreciation, experiential education, an understanding of the environmental crisis and its effects on us, and a basic use of scientific educational tools. The new paradigm of EE must identify and foster such skills, aptitudes and attitudes and furnish both inspiration and the tools to create a more sustainable society. These skills, aptitudes and attitudes include: reconnecting the human with the natural, linking social issues with environmental ones, developing a sense of place and active citizenship, emphasizing the importance of values and promoting real-life experiences. The Heschel Center is working in various ways in order to materialize its EE vision: It has created an ongoing Green Network of schools and a preschool EE programme, developed educational materials and teacher training courses, are publishing an EE journal, and are initiating several EE events in the coming year.

Information: Over the years, the Education and Information Division of the Ministry of the Environment, the staff of the environmental centers, and teachers throughout Israel, have worked with the Ministry of Education to develop formal environmental education. In the formal education system, environmental topics have been integrated into primary, secondary and higher education programmes. High schools specializing in environmental studies have emerged and the Ministry of Education has approved a special environmental studies programme for a high school matriculation examination. Courses and programmes on environmental subjects are offered at each of Israel's universities. The Hebrew University of Jerusalem inaugurated a new bachelor's programme in environmental studies in the 1994/95 academic year while Tel Aviv University recently inaugurated a Super-Center for Environmental and Ecological Studies. Governmental and non-governmental organizations publish newsletters, in Hebrew and English, on environmental policy and activities and maintain Internet sites. Special events are organized to acquaint the public with environmental issues. As an example, every year Nature Protection Week encourages Israelis to become familiar with the natural environment. Each year a different ecological issue is selected as the central theme: rehabilitation of fire damaged forests, coastal protection, desert ecosystems, restoration of streams and rivers, wildflower protection, protection of open spaces, etc. Israel also celebrates international environment days including World Environment Day in June, Earth Day in April, and Ozone Day in September. These and other annual events are accompanied by competitions, youth marches, photography and art contests, clean-up campaigns, workshops and environmental exhibitions. Annual competitions raise environmental awareness in different sectors. Prizes are awarded to industrial plants that invest in environmental improvement, to secondary schools and students for research projects on the environment and for environmental studies, and to voluntary organizations, groups and individuals working on behalf of the environment. Cleanup campaigns, accompanied by media coverage, slogans and posters, play an important part in consciousness raising activities. They include underwater cleanups in the Gulf of Aqaba, as part of a joint project of the Ministry of the Environment and Friends of the Earth Middle East, and in the Mediterranean as part of the International Coastal Cleanup initiative. Non-governmental organizations coordinate cleanups of national parks, nature reserves and roadsides, frequently during national holidays.

Status: General data information on education in Israel: Education is compulsory until the age of 16, and free to age 18. Almost 2 million students (children in kinder gardens, schools, high school and universities) are part of the education system in Israel. The education budget in 2001 was 5 billion dollars. The education system includes more than 50 thousand school classes, 37 hundred schools, 120 thousand educational workers, and 13 thousand kinder garden teachers. The proportion of people with at least a basic education has increased from 65.3% to 85.3% over the last thirty years. Illiteracy has practically disappeared among younger age groups, although it still exists in a small proportion of the elderly, mainly among women. Women comprised 54% of university students in these days, compared to 36% in 1964/65. The general trend has been towards a more education population. In 1993, the median number of years of formal education was 11.8, compared to 10.7 in 1980 and 8.8 in 1970. The population's awareness of environmental issues is growing, with air and water pollution being key issues. A key aspect of educational policy is to provide equal opportunities in education for all children and to increase the number of students passing matriculation examinations. In 1999, the Knesset expanded the incidence of the Compulsory Education Law to 34 age groups. Enrollment in the primary education system climbed from 612,000 in the beginning of the decade to 684,000 in 1999. In 1999, some 535,000 students attended post-primary schools. The Ministry of Education's policy is aimed at ensuring that children complete at least 12 years of schooling and at preventing and reducing drop out rates. Over 165,000 students were enrolled in seven universities and several other institutions of higher learning throughout the country in 1999. During the 1990s, most major universities and

colleges in Israel opened graduate or undergraduate level programmes in environmental studies and management. Environmental classes are now offered in a range of disciplines. Attendance in general electives about the environment is growing. This is both a growing job market and particularly a growing interest among students for environmental education.

Programmes and Project: Over the years, the Ministry of Education has developed formal environmental education curricula based on environmental education principles for all levels of education. While in the past, environmental studies were integrated into such traditional subjects as nature studies, agriculture, chemistry, history, geography and biology, schools are now teaching the subject from an interdisciplinary and multidisciplinary framework. The modular structure of most study programmes provides the teacher with maximum flexibility in choosing subjects and adapting them to the time frame provided and the level of the students. Teachers in the formal educational system, from kindergarten to high school, undergo regular training sessions on environmental subjects. In 1984, the Ministry of Education approved a special environmental studies programme for high school matriculation examinations, at two levels of study. The basic programme provides an understanding of the concepts and foundations of environmental study and focuses on an individual environmental subject related to a specific location in the vicinity of the school. The more intensive programme also includes a special project, dubbed “ecotope” - a student research study that involves fieldwork, observation, surveys and a paper. About 30% of all high schools offer the matriculation programme on the environment. As part of the matriculation programme, high-school biology students carry out a “biotope” project - an ecological study analyzing the interrelationships of organisms in a given ecosystem. Students are encouraged to do independent work, but ecology experts often guide them in the selection of organisms for study and in the research and observations. In light of growing interest in environmental studies at the high school level, the Environment and Education Ministries have initiated the establishment of teacher training centers designed to help teachers guide and supervise students in their “ecotope” projects, to serve as lending centers of scientific equipment (e.g., air and noise monitors) to schools, and to train students to use scientific equipment in the field. At the same time, students participate in workshops that provide basic knowledge of research methods, bibliographical instruction and familiarity with databases. To help meet the need for effective environmental leadership, the Heschel Center (an NGO) has created the Environmental Fellows Programme. The programme enables mid-career professionals from a variety of fields to develop a broad perspective on environmental issues and to launch environmental initiatives. Fellows are helping to broaden the base of the environmental movement and to deepen its vision. The Fellows meet one day per week for a year, with a faculty comprised of academics and activists, and receive a stipend for living expenses. Due to the results of a national survey exposing the apathetic attitudes of Israelis toward littering, a cleanliness campaign specifically focused on educating children was launched in April 1997. More than 1 million dollars was budgeted for an aggressive public service advertising campaign, and the slogans “Whoever litters is garbage.” and “If you litter, you will pay.” were employed. Announcements appear on television, radio, the press, and even buses in both Hebrew and Arabic. An environmental television series was introduced for children between the ages of 5 and 9, and the Israel Children’s Channel focused on environmental issues for six months in 1997. Each year, with the participant of the Ministry of Education, special environmental events take place in Israel, such as Nature Protection Week in the spring and Israel Environment Week in June, to acquaint the public with environmental issues and provide information. Israelis also participate in such international events as Environmental Protection Week and Earth Day. In 1998 The Heschel Center teamed together with Project Involvement to launch the Green Network - a network of schools from across Israel committed to actualizing a new vision of Environmental Education (EE). The Green Network sees education as a critical component in bringing about a shift in public attitudes and policy towards the environment in Israel, thus creating a more sustainable society. The Green Network links schools and community groups across the country by engaging them in meaningful environmental learning and supporting action in their local communities. The Green Network has tried to empower teachers and schools, to be a catalyst for change and to provide the support for the creation of a more dynamic and relevant environmental education involving young people in their community. Some of the most significant things this project has done so far: Building an Environmental Education leadership in Israel: Creating a network leadership core staff of educational facilitators who work with schools intensively in developing new projects and approaches. Developing reflective EE leaders in each school and community to promote environmental change and community activism. Sponsoring over 25 national and regional meetings for school staff as learning and peer support groups, tools for network building and training towards personal, school and community change. Crafting an authentic, inclusive, multi-

cultural story of Israel environmentalism and education: The Network is a meeting place for educators from all sectors of Israeli life: Arab and Druze villages, development towns, cities and kibbutzim. These meetings have sprouted a growing realization of how much one shares in our common connection to this land, and the desire for joint projects and cooperation. The “greening” of school culture and curriculum: Supporting schools to gain skills and know-how to place environmental and social concerns as a central part of teaching and learning. 7 students and 5 adults from Network schools participated at the UNEP Children's Conference on the Environment in England. The Council for a Beautiful Israel has established the “Beautiful Israel Center for Environmental Studies”. The Center offers various types of educational programmes and activities: *The City*: a programme geared towards understanding the complexity of the urban surroundings and modern man's activities within, especially understanding the conflict between nature preservation vs. development. *Ecology*: The programme relates to the characteristics of the eco-system and man as part of that system, the disturbance of the system's equilibrium and current problems at global, regional and local levels. *Green Surroundings*: The programme imparts knowledge regarding the importance of greenery in the modern urban landscape and the planning principles of green surroundings. *The City and its Surroundings*, an Inter-Disciplinary Programme: An integrative programme geared towards understanding the complexity of the reciprocal relations between man and environment as well as enhancing environmental awareness. The goal is to train a cadre of young CBI Ecologists. Perhaps more than any other organization, the Society for the Protection of Nature in Israel (SPNI) has been instrumental in increasing public awareness of nature and environment protection. In its 40 years, the SPNI has established 26 field study centers, 33 branches and community centers, hundreds of youth clubs and comprehensive teacher training programmes. Through a broad-based programme of education, conservation, research and public action, the SPNI involves over a million people annually (about 20% of Israel's population) in its activities. Over the years, the SPNI has spearheaded dozens of campaigns against the destruction of unique, ecological systems and scenic landscapes - the most successful of which were the 1960s campaign against the picking of wildflowers and the campaign against the Voice of America's attempt to construct a transmission station in the Arava Desert. With a membership of over 25,000 families, the SPNI is Israel's largest environmental non-governmental organization.

Cooperation: Israel has joined the United States and other nations in the Global Learning and Observations to Benefit the Environment (GLOBE) Programme. The GLOBE agreement, signed in Jerusalem in March 1995 during the visit of former US Vice President Al Gore, is an international environmental science and education programme bringing students, teachers and scientists together to study the global environment. The project has been integrated into the curriculum of some 50 participating schools, and timeframes were set for teaching GLOBE skills. Environmental topics cover basic environmental concepts, air pollution, global warming and climate change, water resources, water pollution, nature protection and interrelationships among plants, animals and nature, and an individual final project. For each subject a set of concepts, research topics, curricula programmes, activity proposals and experimental guidelines were prepared in a special GLOBE kit. Outdoor enrichment activities, nature and study tours to different sites in the country, and volunteer activities on behalf of the environment (forestation, site adoption, cleanup campaigns, etc.) accompany the studies. One of the innovative academic programmes that emerged during the past five years is the Arava Institute for Environmental Studies. Based on Kibbutz Ketura in the Arava desert, the institute offers a graduate/undergraduate programme designed for Middle Eastern and international students. The student body, comprised of Israeli, Jordanian, Palestinian and international participants, studies an intense “hands-on” curriculum in English. The interdisciplinary curriculum in environmental science, policy and ethics is designed to provide better technical literacy among promising young environmental leaders. Under the Institute's alumni programme, over a dozen NGOs have been started by graduates around Israel as well as in Nablus, Hebron and Amman.

Research and Technologies: In 1999, the Israel Society for Ecology and Environmental Quality Sciences, in conjunction with the Ministries of Education and the Environment, launched a programme to enable youth to become engaged in designing creative solutions to environmental problems. Thousands of middle and high school students participated in two competitions: to design a model environmental city for the 21st century and to develop an environmental business that would both save the environment and make money.

Financing: Activities are financed by the national budget and by local and international funds that support the educational activities of environmental NGOs.

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

This issue has been covered under the heading **Capacity-Building, Education, Training and Awareness-Raising** in the various chapters of this Profile.

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

This issue deals mainly with activities undertaken by the UN System.

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Status: Israel hosted an Expert Meeting on Synergies among the Rio Conventions, supported by the Governments of Israel, Japan, Denmark, and also by UNDP, to elucidate the links between the Convention on Biodiversity, the Framework Convention on Climate Change, the Convention to Combat Desertification and the Forest Principles, and correspondingly to detect the overlaps, convergences and synergies between these Instruments. The meeting pointed at some means for attaining synergy: (a) identification of a national “entry point” - a dryland country will focus its efforts in combating desertification and use it as an “entry point” for addressing also the other conventions, whereas a country with much forested area will use the Forest Principles as an entry point; (b) establishing a coordinating mechanism between the national focal points of each of the conventions, as well as between the conventions' secretariats; (c) identification of indicators that apply to the assessment of progress in all instruments, establishment of a monitoring system and harmonizing the information gathering and analysis procedures, to enable the quantification of progress made towards sustainable development in the implementation of the conventions, and (d) use of this analysis for non-overlapping, shared, streamlined reporting. The following is a list of major agreements and conventions entered into and relevant to Agenda 21, but not covered elsewhere in this report: Article 12 of Annex III of the Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, signed in Washington on September 28, 1995, specifically deals with environmental protection; Agreement Between the Government and the State of Israel and the Government of the Arab Republic of Egypt in the field of Agricultural Ecology, signed in 1993; Agreement between the Government of the Hashmite Kingdom of Jordan and the Government of the State of Israel on Cooperation in Environmental Protection and Nature Conservation, signed in 1995; Agreement on Special Arrangements for Aqaba and Eilat between the Government of the State of Israel and the Government of the Hashmite Kingdom of Jordan, signed in January 1996, has specific sections devoted to Environment, Energy and Natural Resources, and a proposed binational marine peace park; Agreement on the Sub regional Contingency Plan for Preparedness and Response to Major Marine Pollution Incidents in the Mediterranean between the Republic of Cyprus, The Arab Republic of Egypt, and the State of Israel.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: The Ministry of Environment is responsible for catalyzing the collection, analysis, management and dissemination of information and data related to sustainable development. Other ministries involved include the Ministries of: Housing for data on the housing sector; Agriculture for data on the farming sector; National Infrastructures for data on energy-related issues; Health for data on health-related issues; Social Affairs for data on poverty-related issues. The Environmental Planning Division in the Ministry of the Environment coordinates the flow and management of information on sustainable development. The Division has a special coordinator who coordinates studies, reviews and strategies on sustainable development in all relevant agencies. The National Council for the Environment in Israel was founded in September 2000 based on a 1999 government decision. The Council is composed of 75 volunteer representatives from all segments of society and is chaired by the Minister of the Environment. Israel enacted a Freedom of Information Law in 1998. According to this law, every citizen is entitled to receive information from a public authority, subject to a number of restrictions. The law has made information more accessible to the public and has facilitated its flow among different government agencies. All government agencies and ministries have a special delegate to deal with matters related to the flow and management of information. Environmental Impact Statement Regulations within the framework of the Planning and Building Law are targeted at planning authorities, developers and the general public and provides a framework within which to integrate environmental experts in decision making on planning and development. The regulations call for EIAs to be prepared according to specific guidelines which ensure that the EIA will be a useful tool to decision makers. Several laws and regulations include provisions on the flow and management of data and information to relevant authorities, especially provision of reports on environmental monitoring and sampling. Scientists are the major group contributing to the collection, assessment, management and dissemination of information and data for decision-makers in the field of the environment. Several universities and research centers are actively involved in these subjects. Indigenous people are involved in much lower capacity. They have cooperated with non-governmental organizations and universities in the development of knowledge on several topics, one of which is the medicinal use of native plants. Non-governmental organizations take an active role in the collection, assessment, management and dissemination of information and data for decision making for sustainable development. The private sector is involved in providing information at local and national levels. Decision-makers may commission research papers and reports from the private sector. In addition, industries are required to provide information on monitoring, stack sampling, quantities of hazardous materials, pollutant emissions and means utilized to prevent pollution to national authorities. This information is an important means of surveying the quality of the environment in Israel, assessing environmental trends and drafting new policies/legislation.

Programmes and Projects: The Environmental Policy Research Center of the Jerusalem Institute for Israel Studies is developing a programme for indicators of sustainability. The Ministry of the Environment in cooperation with the Israel Central Bureau of Statistics is advancing an environmental indicators project targeted at publishing some 160 indicators which will present the status of sustainable development and environment in Israel. Plans are currently being advanced to publish an initial booklet of indicators in the areas of legislation and enforcement, research, hazardous waste, energy production and consumption, transportation, river quality, air pollution, solid waste, and wastewater. Major programmes include the following: Upgrading and improvement of the GIS system; Preparation of a national report on sustainable development which integrates national information on environment and development; Development of methods of data assessment in the field of sustainable development; Strengthening programmes in the public and private sectors and in universities which deal with the collection, assessment and dissemination of traditional/indigenous knowledge and know-how. The Environment Ministry's Information Division has been using the GIS as a planning and information tool since 1998 and has developed a GIS which contains over 25 layers of information for the country. This has allowed for the development of a database for several sectors. A remote Sensing Support for Analysis of Coasts (RESSAC) project was launched in 1998, within the framework of the European Commission Programme on Environment and Climate. Its purpose was to demonstrate the advantages of integrating remote sensing techniques with other sources of information to improve knowledge and understanding of environmental conditions in Mediterranean coastal areas and helps develop a sound database for management systems. The National Air Quality Monitoring Network of the Ministry of the Environment provides real-time information on air quality throughout the country. Monitoring networks also

exist in the areas of groundwater, surface water, river and coastal water quality. The Central Bureau of Statistics is continuing to collate, analyze and upgrade information in all areas and a special department on the environment has been set up. Data in the form of tables and graphs is available on the Internet.

Status: Israel is in the initial stages of setting up a programme on indicators of sustainable development. These indicators will communicate environmental information to decision-makers about the priorities for policy development and goal setting. They will provide a gauge by which the Ministry of the Environment can measure its success in implementing policy while pinpointing goals for future achievement. Flow and management of information need to be improved in some areas, including transportation and energy. There is also a need to integrate existing information, currently dispersed among several bodies, into an integrated database of information. The major challenges are institutional and financial rather than technical. Limited funds and lack of personnel are the major limiting factors in the development of a national information system. The institutional challenge is linked to inadequate public awareness of sustainable development issues.

Capacity-Building, Education, Training and Awareness-Raising: The Ministry of the Environment and the main environmental NGOs in Israel are involved in promoting the use of information on sustainable development. Publications, press releases to the media and the Internet are used to promote public interest on sustainable development. Special study days on sustainable development in different sectors have been held in recent years during which written material was distributed. Two main kinds of programmes exist for capacity building: Training programmes for employees of government agencies, and specific projects within the framework of the Ministry of the Environment, which include staff training. Non-governmental organizations have also promoted training programmes to build capacity. For example, the Heschel Center has established an Environmental Fellows Programme to build leadership capacity, assists other environmental organizations to enhance their effectiveness through better networking and sharing of ideas.

Research and Technologies: The Geographical Information System (GIS) is being improved and upgraded. The Environment Ministry's Planning Division has been using the GIS as a planning tool since 1988 and has developed a GIS which contains about 25 layers of information for the country, the average scale being 1:50,000 meters. In addition, satellite-based remote sensing technologies have been used increasingly to improve methods of data collection, especially with regard to the sustainable development of the Mediterranean coast of Israel and open spaces throughout the country.

Financing: the Coastal Area Management Programme of the Mediterranean Action Plan, UNEP, supported the initial collection, analysis and dissemination of information on sustainable development. Additional funds have been allocated by the national budget. Various private funds have provided funding to non-governmental environmental organizations for the collection and publication of material on sustainable development as well. The Ministry of the Environment is allocating funds for improving the national information system, and especially the Internet network.

Cooperation: Israel has taken an active part in different working groups operating under the Mediterranean Commission on Sustainable Development (MCSDD). It is also part of the Mediterranean regional initiative on the development of some 130 indicators on sustainable development. It has already prepared dozens of indicators for submission with the assistance of the Israel Central Bureau of Statistics. In addition, as an active partner of the Mediterranean Action Plan it has taken a significant part in all components of the plan, including legislation and planning. Israel has signed several bilateral agreements on environmental and sustainable development issues. Bilateral agreements were signed with the United States (1991), Germany (1993), Egypt (1993), Spain (1993), Turkey (1994), England (1997), and several other states. In addition, the peace agreement signed with Jordan in 1994 contains clauses on information exchange on environmental subjects and on sustainable development. Cooperation is implemented through the following: the bilateral and multilateral agreements signed by Israel which relate to cooperation in the transfer of technologies, among other subjects; the Center for International Cooperation (MASHAV) in the Ministry of Foreign Affairs organizes courses in Israel for participants in other countries. Several of the courses deal with development and management of national information systems. For example, in

1999, courses were developed for African and Asian countries, in cooperation with UNESCO, on such subjects as information retrieval and Internet-based systems and establishing and running large scale Internet-based services.

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CHAPTER: INDUSTRY

Capacity-Building, Education, Training and Awareness-Raising: in 1997, the Standard Institution of Israel along with several related standards adopted the ISO 14001, an Environmental Management System. The accreditation process requires industries and organizations to undertake an environmental survey to check compliance with legislative requirements, to review existing practices and procedures, to pinpoint previous incidents and accidents. It then progresses to an environmental review, drafting of environmental policy, implementation and operation, monitoring and corrective action, management review to check conformity with objectives and targets and continual improvement in environmental performance. ISO 14001 is a voluntary standard, but, in the final analysis, it is the economic interest that motivates industries to become accredited. Those who have opted to take part in the process have discovered that the standard provides practical tools that go beyond compliance with legislation and can bring a sound return on environmental investments. This systematic approach can lead to the following benefits, among others: Reduced cost of waste management; Savings in consumption of energy and materials; Lower distribution costs; Improved corporate image among regulators, customers and the public; Framework for continuous improvement of environmental performance. It is not surprising, therefore, that the first Israeli industries that jumped on the ISO 14001 bandwagon were major exporters and industries recruiting funds abroad. In today's global village, this is not a question of ideology, but rather a matter of plain business sense. European customers will not buy products or services from polluting industries. Insurance industries will not insure industries that do not have a clear policy on the environment. The day may not be far when ISO 14001 accreditation will be required by insurance industries, government ministries and large industries in tenders. Yet industrial and services industries are not the only candidates for ISO 14001 accreditation. Local authorities stand to benefit from the process as well for a city which administers its interests based on environmental vision will bring about sustainable development, support of environmentally sound businesses in its jurisdiction and thereby a better city image, higher property value, and much more. One of Israel's municipalities (Karmiel) has already expressed readiness to begin the process. Other sectors that may well benefit from accreditation include the tourism industry and industrial zones. Established in 1991, the Israel Economic Forum on the Environment, comprised of 120 businesses and organizations, aims to increase environmental awareness within the business community, to deepen industry's involvement in the advancement of environmental quality and to adopt the "pollution prevention pays" principle. The forum encourages industry, agriculture, transport and other economic sectors to incorporate environmental concerns into their socio-economic development planning.

Status: The Gross Domestic Product in the year 2,000 (all figures refer to Millions of U.S Dollars) was 110,332. The GDP per capita was 17,581. The investment in fixed capital was 19,692. The export of goods and services was 44,145 while the import of goods and services was 51,813. The industrial exports kept rising, from 18,310 in 1997 to 28,865 in 2000. The unemployment rate stood on 8.8%, and the inflation rate stood on 0%.

Cooperation: The IICRD is a public non-profit organization established by the Manufacturer's Association of Israel, the Kibbutz Industry Association and the Workers Industries for the Advancement of Hi-tech Industry in Israel. The IICRD is the "long arm" of the Chief Scientist and as such is engaged in implementing international agreements for technological cooperation signed between Israel and various countries. In addition, it works towards the integration of Israeli industrial companies in R&D projects abroad. The IICRD coordinates and directs the Israel Innovation Relay Center (IRC), established within the framework of the EEC Innovation programme. It is one of 53 similar organizations existing in various European countries. In close cooperation with the Chief Scientist, the IICRD has been implementing supplementary programmes to achieve its goals. These include marketing and technological cooperation between Israeli industrialists and leading local and foreign corporations.

Research and Technology: The Ministry of the Environment has welcomed the voluntary adoption and implementation of ISO standards by industries, organizations, plants, factories and municipalities. It is convinced that accreditation, no matter what the cause, will increase the environmental awareness of organizations and their employees and will reduce environmental pollution. In fact, when ISO 14001 was first introduced in Israel, the Environment Ministry set a clear policy designed to encourage plants and organizations to seek such accreditation. The ministry clearly stated that the ISO 14001 file would not serve as a source of information for inspection and

enforcement purposes. To further demonstrate its support, the ministry initiated an experimental and, at this stage, limited project, to reduce environmental pollution and to advance awareness of economically advantageous environmental investments by granting financial aid to industries undergoing accreditation. Twenty-five Israeli industries have already committed themselves to an environmental future through ISO 14001 accreditation. Many more are embarking on the path. The benefits require no further elaboration--increase compliance and conformance with environmental legislation, raised awareness, better performance, less pollution and a sound return on investment. The Standards Institution of Israel (SII) is the country's official body for the preparation and publication of Israeli standards. The SII is committed to promoting environmental quality and increasing environmental awareness through a basket of services which includes a wide array of environmental tests conducted in its laboratories on soil, water, air and other pollution sources, certification of environmental management systems, granting of green labels for environment-friendly products, preparation of environmental standards for green products and testing methods, and preparation and dissemination of information. The Environmental and Accreditation Division, is responsible for the accreditation of environmental management systems (ISO 14001) and for granting the green label for environment friendly products. Environment related standards include 12 testing methods for air quality, 8 for water quality, 11 for radiation protection, 15 for solid waste, as well as 8 standards for green products, 5 Environmental Management System standards, and 4 standards on green building.

Information: The object of the IICRD is to assist small and medium-sized industries in improving their competitive capabilities through expanding their technological base and developing core skills and technological capabilities through joint R&D projects with European industries. In order to realize the objectives of the IRC project, the IICRD is involved in the collection and distribution of information on Israeli technology projects among potential partners in various countries. In addition, it gathers information on overseas 'business opportunities' (i.e. foreign companies seeking potential partners for joint R&D projects) from various sources and passes this on to suitable Israeli industries. The IICRD holds conferences and seminars as a mean of creating awareness of opportunities in international cooperation among Israel's industrial and scientific community. It also provides guidance and direction in locating partners and formulating joint programmes.

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: The Ministry of Tourism, in cooperation with the Ministry of Interior and other governmental bodies and NGOs, formulated a National Master Plan (NMP 12) for the development of Tourism and Recreation Areas.

Programmes and Projects: The NMP 12 establishes a comprehensive national policy and a set of planning principles according to which modes of activity and regional planning frameworks are delineated.

Status: The planning policy is based on two foundations: The relative advantages of Israel in the area of heritage, cultural and religious values; Environmental constraints of density, continuous pressure on land, water and environmental resources, and on nature and landscape values. Based on these foundations, development principles were determined to optimally utilize the relative advantages, without overburdening nature and landscape resources and in accordance with their carrying capacity.

Capacity Building: The Planning Division in the Ministry of Tourism is responsible for assessing projects according to the principles of NMP 12 and the Ministry's policies. The Ministry of Tourism is in the process of developing an educational programme to increase the awareness of the general public for sustainable tourism.

Information: A book that includes the vision, maps and instructions of NMP 12 has been distributed for comments to the public, through the Regional Planning Committees. Currently the plan is reviewed and revised. In the near future NMP 12 will be presented for approval to the National Planning Committee and to the Government. As soon as the plan is approved, it will be presented on the Internet sites of the Ministries of Tourism and the Interior.

Research and Technologies: Each tourism project in areas that were designated as environmentally sensitive, must prepare an environmental and tourism influence assessment memorandum. The plan includes maps and a set of verbal instructions. The maps were created in a digital format using a GIS technology.

Financing: The Israeli Government financed the NMP 12. The map of priority regions, to receive government grants to investors in tourism projects, is based on the maps NMP 12, among other considerations.

Cooperation: In the past few years, discussions took place between Israel and Jordan on cooperation in environmental issues in the Gulf of Aqaba and the Dead Sea.

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