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SLOVENIA

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 Environnemental 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 coordinating bodies in the field of international cooperation are the ministries of: Foreign Affairs; Economic Relations and Development; and Environment and Spatial Planning. Major groups that are especially involved in international cooperation are the local authorities and NGOs.
The National Environmental Action Plan (NEAP) recognizes that Slovenia has to cooperate with the EU as an accession country to the EU and to be a part of the international community for sustainable development in the following fields: implementation of financial and conceptual obligations of Slovenia's participation in international agreements and partnerships; ratification of relevant international agreements in the environmental, nature and water protection areas; following and shaping of new international agreements for sustainable development; integration of the principles of sustainable development into formulation of the foreign affairs policy of Slovenia; and, strengthening the cooperation with neighbouring countries in solving common environmental and other problems. The NEAP also recognizes Slovenia's obligation to use its available human and financial resources to participate in international processes of problem solving. Therefore participation in international instruments of support for developing countries, such as IDA (International Development Assistance) and GEF (Global Environment Facility) and the promotion of Slovene knowledge and experience in countries with similar problems are, inter alia, pointed out as priority tasks for ensuring sustainable development. Slovenia's international involvement for promotion of sustainable development is reflected in its participation in numerous international agreements encouraging environmental protection or attempting to link international trade to sustainability, such as the Convention on Biodiversity, the Framework Convention on Climate Change, the Basel Convention, conventions in the field of nuclear energy, the Vienna Convention on Ozone Layer Protection, the Montreal Protocol, the Barcelona Convention and the Ramsar Convention. By signing the European Agreement, Slovenia accepted the decisions of the EU concerning international cooperation for sustainable development, committing itself to establishing instruments for their enforcement.

Programmes and Projects: The pre-accession economic programme sets the increase of the international competitiveness of Slovenia, and the increase in exports linked to it, as one of the goals for trade related promotion of sustainable development. The programme also plans to stimulate foreign direct investments (FDI), to replace foreign loans and improve the export efficiency of Slovenia, as this would offer a basis for Slovene investments abroad. The Slovenian government programme for stimulation of FDI defines the changes needed for more favourable climate for FDI. As one of the ways to attract FDI to Slovenia, grants for projects, which offer technological transfer and a contribution to balanced regional development, are available through TIPO. Grants on inward investment projects, support schemes such as training incentives and selective regional assistance are negotiable with local authorities. Apart from the EU Phare programmes, many of Slovenia's activities are conducted as part of bilateral cooperation between Slovenia and Austria (e.g. Commission for Sustainable Use of Waters), Croatia (e.g. water management), Hungary (e.g. sustainable development of border area with Austria) and Italy (Phare projects). Another initiative in which Slovenia takes part is the Central European Initiative that, through its 17 members, stimulates development of its less developed members and promotes cohesion in Europe. The initiative functions through working groups focused on different areas, such as environmental protection or raising awareness. Slovenia also participates in the Alps-Adriatic Working Community, which is composed of various regions of Italy, Austria, Hungary and Germany, and Slovenia and Croatia as a whole. The Community deals with the issues that are important for its members (e.g. environmental issues, traffic, tourism, cultural relations etc.). In 1995 the Cross Birder Multi Annual Indicative Programme for the cooperation of Slovenia, Austria, Italy and Hungary was prepared for the period 1995-1999. During 2000-2006 the Joint Programming Document is formed as a basis for Phare CBC/INTERREG projects. Many activities are running in the framework of the Fund for Small-scale Projects, most of them focusing on the promotion of sustainable development.

Status: Slovenia has been in transition since its independence in 1991 and as such has tended to put a priority on its trade liberalization and international cooperation for efficient in this decade rather than supporting sustainable development in developing countries. Therefore this report encompasses Slovenia's achievements in the prioritized fields. Slovenia as a relatively small country can develop successfully only as an open, outward-oriented economy. This implies not only the growing importance of international trade but also the comprehensive internationalization of the Slovene economy. Foreign companies that enter Slovenia enjoy full national treatment. There are no entry barriers and the statutory costs of starting a business are modest. Transfer of profits and invested capital in foreign currency abroad is free and unrestricted. The liberalization of trade is achieved through Slovenia's participation in the WTO, as well as in many regional (e.g. CEFTA) and bilateral agreements for promotion of free trade. Although Slovenia still uses non-tariff instruments, such as contingents, and occasionally protects its agriculture by increasing seasonal tariffs, its trade system is relatively liberalized and its economy open.
Cooperation with OECD is based on Slovenia's strategic goal of becoming a full member of OECD. The contribution of 1 million SDR to the second replenishment of the GEF Trust Fund in 1998, the fulfilment of its obligations and a warrant for 1 million SDR for the 3rd replenishment were one of the steps which will gradually place Slovenia alongside other developed countries in the international community and in this way promote it as a competent partner in the process of ensuring sustainable development in the world. Slovenia cooperates with the agencies of the United Nations in the field of technical assistance to developing countries and to countries in transition in connection with the issues of trade policies and international economic integrations (ECE, UNCTAD, ITC and other). Slovenia is also a donor in the Pact for Stability for South-Eastern Europe. It should be noted that Slovenia has recently changed its recipient status into that of a donor country.
As about 50% of Slovenia can be categorized as an area of environmental transboundary effects and its problems and tasks are to some extent similar to those in neighbouring and other nearby countries, Slovenia tends to cooperate with them. The cooperation enables more efficient dealing with regional development obstacles. Slovenia is involved in widespread and valuable cooperation in several fields in specific regions, topics and projects. The Danube River Basin, the Adriatic Sea, and the Alps are only some of the geographical frameworks for such cooperation.

Capacity-Building, Education, Training and Awareness-Raising: Within the responsible ministries, many agencies and offices fulfil the tasks of capacity-building, education, training and awareness-raising. TIPO offers a full range of free services tailored for prospective and existing foreign investors. Institutions, such as the Institute of Macroeconomic Analyses and Development (with its publication of the Slovenian Economic Mirror), the Competition Protection Office and the Chamber of Commerce and Industry of Slovenia are engaged in the promotion of international cooperation in the economic field, while the Agency of Slovenia for Regional Development stimulates cooperation from the developmental point of view.

Information: Information related to trade, investment and economic growth is available from several sources. Potential users can be provided with paper and electronic publications and reports made by governmental bodies, NGOs, independent institutes and other organizations. Corresponding information can be easily accessed via the Internet. For details see the List of sources.

Research and Technologies: In 2001 a project funded by UNIDO and the Slovene Ministry of Education, Science and Sport established an association of 8 institutions that cover various fields of sustainable development in order to gain a stronger potential for research. In the second phase the connections are to be internationalized to establish an International Centre for Sustainable Development in Slovenia. With support from UNDP, Slovenia ran a project that aimed to strengthen and develop Slovene institutions that support dialogue among different stakeholders in sustainable development. Currently a project for building up a global information network for the field of biodiversity is in progress.

Financing: Important sources of financing international cooperation are the EU programmes, such as PHARE Cross Border Cooperation (CBC), PHARE Large Scale Infrastructure Facility (LSIF) and ISPA (Instrument for Structural Policies for Preaccession). GEF is also an important source. See also under **Programmes and Projects**.

Cooperation: See under **Decision-Making**, **Programmes and Projects**, **Research and Technologies: Research and Technologies**, and **Financing**.

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

Decision-Making: See **Chapter 2** of this Profile.

Programmes and Projects: See **Chapter 2** of this Profile.

Status: See **Chapter 2** of this Profile.

Capacity-Building, Education, Training and Awareness-Raising: See **Chapter 2** of this Profile.

Information: See **Chapter 2** of this Profile.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 3: COMBATING POVERTY

Decision-Making: The Ministry of Labour, Family and Social Affairs (MLFSA) is the one most directly concerned with the issue of poverty. However, there are also other ministries which are important for this topic: the Ministries of: Health; Education; Science and Sport; Economic Affairs; etc. Key operational institutions on this field are: the Employment Office of the Republic of Slovenia, the Professional Education Centre of Slovenia, the Slovene Development Corporation, the Small Business Promotion Centre, a group of employers' associations (the Chambers of Trade and the Chamber of Economy of Slovenia), the Pension and Disability Insurance Institution, specialized institutions for training and employment of the disabled etc. Apart from public institutions, there are also specialized non-governmental institutions, which have concessions for the implementation of social or employment policy. In addition to the ministries, there were other participants in the preparation of the programme: municipalities, NGOs, experts, and representatives of the media. Each Ministry has analyzed in detail the regulation currently applying to its area, from the viewpoint of poverty and social exclusion; a list of effective strategic or programme-related documents of national significance has been prepared, and relevant measures have been suggested. The principal implementer of active employment policy programmes is the Employment Service of Slovenia. Their most important partners are: the Slovenian Development Corporation, labour funds, sheltered workshops, centres for the rehabilitation of the disabled, the Small Business Promotion Centre, local promotion centres, private and public educational agencies, a network of public works coordinators, the Regional Development and Preservation of Slovenian Rural Population Fund etc. (RE9, 92).

Programmes and Projects: One of the main goals of the National Social Assistance and Services Programme is to ensure the opportunities for development of support, charity and self-help, and to encourage the non-governmental and private sectors and the users' associations and to inter-connect them into a uniform system of social assistance and services. This should be achieved both by means of suitable taxation mechanisms and by means of granting concessions and more stable co-financing of the programmes of NGOs. The development of NGOs has increased rapidly over the past few years. Their programmes cover an increasing number of people, both those who provide various services and those who ask for such help. Their operation is often based on volunteer work and on principles of self-help. They are partly financed from donations and voluntary contributions, foundations, and contribute by their users themselves, while their programmes are also financed from public funds, most often from municipal budgets and funds of the MLFSA (PE, 58, 49).

Pension reform: In a bid to adjust the pension and disability insurance system in line with changes in demographic trends as well as with the new economic and social situation, pension reform was completed at the end of 1999. The reform was designed to somewhat slow down the growth of general government expenditure on pension and disability insurance and, in the long-run, to bring about social security for pensioners, those who are currently insured, and those who are about to take out an insurance policy. The reform develops the advantages of the established inter-generational agreement; in creating the possibility for voluntary (capital funded) supplementary insurance, it expands the opportunity for individuals to improve their own material circumstances and conditions in old age (RE9, 98).

Social policy: The eradication of poverty and social exclusion is one of the main goals of Slovenia's social policy. In general, it is already defined in the Economic Development Strategy of Slovenia. However, the National Programme for the Fight against Poverty and Social Exclusion (2000) is an integral national strategy on this topic. There are many other programmes, which deal with the causes of poverty and social exclusion and with reducing their consequences (the policies of employment, education, health, housing, family, and social security). The Programme's aim therefore is to coordinate, integrate and upgrade these programmes that only deal partially with these issues. The Programme has two main goals: to help those facing the conditions of poverty and social exclusion to find a way out as soon as possible; and to prevent poverty and social exclusion of members of critical social groups. In order to meet these goals, it is most important to: provide a job that ensures social security to everyone; reduce the number of dropouts and raise the level of qualification; provide more non-profit or social housing and introduce subsidies for those who cannot cover the cost of high rent; and raise the level of social

benefits for those who cannot provide for themselves and introduce measures to ensure that social benefits are only used to bridge the period before going back to living independently. Some measures stated in the programme are already being implemented in Slovenia.
Since 1990 Slovenia has paid great attention to and also substantially supported the development of the active employment policy as a system of target-oriented measures and programmes for influencing the labour market with the following aims: to create new jobs; to increase professional; sector-related; and geographic mobility of the workforce; to adjust the knowledge and proficiency of employees to the modified conditions of production which are dictated by the market; to encourage the development of entrepreneurial incentives and self-employment as well as the re-integration of other employees into work; to prevent the marginalization of certain groups of the unemployed; and to coordinate supply and demand in the labour market. On the basis of the adopted guidelines of the EU the MLFSA has prepared Strategic Objectives for the Development of the Labour Market and Employment (2000-2006) and National Action Programme for Employment (2000-2001). There are four pillars of the employment policy: measures to increase employability; entrepreneurship; adoption of individuals or companies; and equalization of job opportunities. The guidelines set out in the last pillar define in detail the activities for equalization of job opportunities for the less employable, such as certain categories of women, elderly persons, and young people without education, disabled persons, the Roma, and socially less adaptable individuals. The state is preparing a series of programmes and activities to improve their health, employment status, education, cultural activity, and living conditions. Training and Employment Programme for Disabled persons by 2002 enforce new measures for encouraging the vocational rehabilitation, employment and working integration of disabled persons.
The National Social Assistance and Services Programme for the period up to the year 2005 is based on plurality (of programmes and services and their providers), the right to choose, the introduction of private financing of benefits, establishment of non-institutional forms, expansion and diversification of the public service network and establishment of complementary networks outside the public service. The Programme stresses the urgency of transition from a passive to an active policy in social assistance and services, and the application of a preventive approach to social exclusion, which consists of incentive measures. The measures pursue the goal of increased re-employability and social integration, while simultaneously ensuring a decent living for those who are unable to provide it for themselves.
The National Housing Programme exposes the need for a more extensive provision of funds for non-profit and social flats. Two types of measures should be considered to achieve this: on the one hand, the budgetary funds of municipalities ought to be increased, and on the other hand, the municipalities themselves ought to be supplied with supplementary resources (indirect funding of construction via housing funds). The Programme will also provide a basis for solving of housing problems of particularly vulnerable groups, especially young families, disabled persons, persons with mental health disorders and the elderly. The Programme also incorporates special measures for prevention of homelessness by providing provisional temporary flats. The National Health Programme up to the year 2004 will identify priorities in the field of health care aimed at particularly threatened groups of the population.

Status: The Constitution of the Republic of Slovenia guarantees its citizens rights: social security, health and pension insurance, protection for those who are incapable of working, as well as other forms of insurance, such as the protection of socially-endangered groups. Social security rights in the case of death and those concerning loss of earnings during sick leave, for the old age population, for those who are incapable of working, and for the unemployed, are guaranteed by the system of paid contributions for social security and health care by the employed and their family members. The minimum wage is also guaranteed for socially - and materially - underprivileged individuals, particularly the elderly and those who are incapable of working.
The following facts summarize the present situation in Slovenia: the number of recipients of various cash benefits and other social transfers has been increasing for some time; owing to the relatively high unemployment rate, a significant proportion of the population in its most active period of life is being deprived of equal opportunities for full social integration; unemployment of first-job seekers and long term unemployed persons are causing particular concern; the share of elderly inhabitants is rapidly increasing and will have a considerable effect on the programmes involving health, pensions and invalidity, social assistance and services as well as development of

family relations; there is a growing number of children and young persons suffering from violence and sexual harassment or encountering difficulties in their growing-up period; owing to economic uncertainty, primarily caused by poor employment and housing opportunities, short-term conditions for the creation of a young family are not improving; the number of suicides and attempts at suicide is causing concern and is not diminishing; the disabled and other persons with disabilities are unable to participate in the social process on an equal footing, since the conditions which would enable them to develop their ability and maintain human dignity are not always and everywhere provided for; the proportion of persons with various addiction problems is increasing; in several areas, women do not have equal opportunities and more often find themselves in poverty, particularly those who support their children by themselves; the possibilities for users of services to choose among various types of assistance are still limited (PE, 50). *Social insurance schemes*: The pension and invalidity insurance system guarantees social security to the insured and their dependants in the case of old age, incapacity or impaired capacity for work, or in the case of death, i.e. in cases when, for various reasons, the insured are unable to continue to generate income. Insurance in the case of unemployment is regulated by the Employment and Insurance in the Case of Unemployment Act. The Health Care and Health Insurance Act defines the system for securing basic health insurance for all the inhabitants who are permanent resident in the country (i.e., for the inhabitants who are gainfully employed or who deliver gainful services in Slovenia). Contributions for those who have no earnings are paid by municipalities (i.e., by the state from its budget).

Employment and social protection: The types of benefits and conditions for their eligibility are stipulated by the Social Assistance and Social Services Acts and their amendments. Activities for improvement of social status of underprivileged beneficiaries and types of assistance, which enable the individual to ensure social protection both for himself and his family, are given priority over the mere granting of social assistance. Income social support may be granted to persons and their family members who are temporarily unable to support themselves for reasons outside their control. Income support is therefore granted for a specified period, whereupon it can be reallocated if the original conditions have remained unchanged. The Act also defines the public social services providers which, among others, provide the following institutional protection for especially vulnerable groups: homes for the elderly, special social services providers, centres for mentally and physically handicapped people, homes for children and young people, social welfare institutions for the education of children, young people with moderate to severe learning difficulties, and a home for mothers with children who have housing problems or problems in their family. The Legal Aid Act regulates efficient access of the poor to courts and jurisdiction.
Family protection: The Family Benefits Act, together with other laws on schooling, health and social assistance and services, and taxation, regulates direct and indirect family benefits, such as school meal subsidies, personal tax allowances, child benefit etc.
Housing: The Housing Act regulates the provision and allocation of council flats as well as assistance in the use of flats. The Act does not allow evictions if households are not able to pay rent and utilities as a result of social constraints (i.e., unemployment, ill health, disability, etc.) in which case the local authority is obliged to assist with the payment of rent or the provision of adequate social housing.
Persona Income Tax: The Personal Income Tax Act integrates the elements of social policy into the personal income taxation system. Improvement of the socio-economic position of the low-income segment of the population will be also the starting point in shaping a new income-tax system; their aim will be a redistribution of income from the rich to the poor and socially more vulnerable groups of population.

Unemployment has increased during the transitional period from three percent (1990) to the EU level (12%) (I, 92). In 1993 there were 50,341 unemployed persons, who were included in various measures of active employment policy, and in 1998 that number increased to 66,166; in the year 2000 the estimated figure was 88,270 unemployed persons (I, 25). In the first few years after Slovenia gained independence there was an extraordinarily strong wave of new enterprises; its peak was in 1992. Since then the number has decreased and in recent years the number has stagnated (I, 24). The social security level in Slovenia is relatively high, especially if we take into account the issues brought about after Slovenia gained its independence and after the new state was constituted (I, 12). The poverty line1 has increased during the transition period (1990s), but remained stable between 1993 and 1998. In

1993, the poverty rate was 13.5% (I, 85). With the transition into a market economy, income inequality is increasing. However, a significant increase in unemployment benefits and other social benefits reduced income inequality 1993-1998 (RE1, 97). The most disadvantaged groups exposed to poverty are: single households with elderly inhabitants, lone parent households on low income, and households with no income earners (e.g., unemployed) (I, 85). The scope of hidden and open homelessness in Slovenia is growing. Hidden homelessness concerns particularly the cases of individuals or families using their personal connections to bridge their housing problems caused by the sudden loss of their own accommodation. Most frequently these are women with children, people without citizenship, people with mental health problems and foreigners. This problem is all the more difficult to solve because there are no social flats available and no other facilities for provisional accommodation to bridge critical housing problems. This problem is made even worse by the fact that there is no adequate system of subsidizing rents (PE, 108). The results of the seven-year period of implementation of the Health Care and Health Insurance Act have proved that the current system offers equal opportunities to the entire population as to asserting their rights to treatment, and that treatment expenses do not endanger the health and social security of the population. In addition, the location of health care facilities offers to all those insured a relatively equal access to health services. Eight-year elementary school education is compulsory in Slovenia. There is a good spatial distribution of vocational-technical and other secondary schools, so that various programmes are available for pupils within easy distance, so that they generally do not have to leave their homes (I, 12-13).

Capacity-Building, Education, Training and Awareness-Raising: *Education*: In 1996, the Slovenian Parliament passed new school legislation which provides greater diversity and flexibility in the forms and types of schooling, openness in the schooling system, and an easier transition within it (as well as opportunities within the system for life-time education by changing the contents of programmes and curricula). Regarding basic principles and objectives, the legislation particularly emphasized that equal opportunities in education should be guaranteed, and that with respect to social integration, the role of schools should be increased (I, 13). See under **Status**.

Information: The National Programme for the Fight against Poverty and Social Exclusion defines in detail some indicators for objective and subjective measurement of poverty and social exclusion. It also analyses the current situation in certain fields, and proposes a system of additional measures in strategic, programme-related, and legal documents. There is a special chapter devoted to the methods of monitoring this programme (I, 14). Data bases from monitoring the effects of implementation of the programme will be collected and arranged by the Institute of RS (Republic of Slovenia) for Social Protection; the overall implementation of the programme will be monitored by the National Board for the Fight against Poverty and Social Exclusion (PE, 73).

Research and Technologies: Several authors and research institutions have been engaged in analytical and research work in the field of poverty. In Slovenia, more attention began to be devoted to poverty in the second half of the nineties. The understanding of poverty and the measures to deal with it were founded on studies made by the Statistical Office of the RS, Public Opinion Polls conducted by the Centre for Opinion Research and Mass Media at the Faculty of Social Sciences, and the National Programme for the Fight against Poverty and Social Exclusion.

Financing: The share of total government expenditure on social security (from 22 to 25% of GDP) in Slovenia does not differ much from that of other west European countries. However, it differs in how the expenditure is allocated: the share of expenditure on health and the elderly is among the highest (S, 90). Around 13 % of GDP is allocated to pension and disability insurance, around 5 % to education, around 6 % to compulsory health insurance and around 1,5% of GDP to housing, spatial planning and environmental protection (RE1, 84). The share of the funds for the implementation of the employment policy in 1993 amounted to 2,31% of GDP, and in 1998 only 1,3% (0,89% for passive and 0,41% for active employment policy measures) (I, 25).

Cooperation: In the area of social protection and employment, Slovenia is cooperating with several countries and with some international organizations and associations. The National Programme for the Fight against Poverty and Social Exclusion includes, in particular, certain international initiatives and orientations, which were the force

behind its preparation. In 1999, Slovenia ratified the revised European Social Charter drawn up in Strasbourg in 1996. Slovenia has committed itself to an agreement from the Habitat Agenda that 20% of GDP should be allocated to basic social programmes. In a few years Slovenia will be considered to have completed the joining of the group of well-developed countries, which will also mean a definite halt to its entitlement to various types of development assistance from abroad. It is expected that Slovenia will increasingly provide financial and other help to developing countries. One of the priority development tasks for Slovenia within the global distribution of responsibilities concerning sustainable development is, an active participation in international instruments providing assistance to developing countries, in particular IDA (International Development Assistance), GEF (Global Environment Facility), and instruments active for this purpose in other organizations (i.e., on the basis of international treaties).

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: There is no single body with a task to coordinate activities related to sustainable consumption patterns. There are however certain government bodies which directly or indirectly deal with this issue and they include: the Department for Environment (Ministry for Environment and Spatial Planning); the Office for Consumers' Protection (Ministry for Economy); the Agency for the Rational Use of Energy; the Office for Tourism; and the Council for Sustainable Development (established in 1998 but had started with regular meetings only in 2000). Municipalities are responsible to encourage sustainable consumption at the local level, also through preparation of Local Agenda 21 programmes.

Legislation and regulations that influence sustainable consumption are as follows:

- The Environmental Protection Act incorporates the principles of sustainable development. It requires publishing of a Report on the State of Environment in Republic of Slovenia, which should serve as a tool, which would indicate the trends to/from sustainable consumption patterns. In Article 43 it provides for the introduction of an Eco-label but the system is not yet in place in Slovenia;
- In 1997 the Government passed the Carbon Dioxide Emission Tax to reduce greenhouse gas emissions and the use of non-renewable natural resources. With this regulation the users of liquid, gaseous and solid fuels for heating, turbines and motor vehicles are taxed relative to the amount of CO2 released in the burning process. In the year 2002 modifications of this regulation to make it better suited to its purpose;
- In 1995, a regulation introducing a wastewater tax was adopted. The tax is proportional to the pollution loads of the wastewater;
- In 2001 a regulation for Tax on Waste was adopted and will be enforced on 1 January 2002;
- A regulation for mandatory labelling of white goods (washing machines, refrigerators, etc.) is been prepared in 2001 and will enter into force in the year 2002. The Office for Consumer Protection and the Agency for Efficient use of Energy will provide labels (60.000) to companies to help them comply with the regulations; and
- There is no legislation setting up restriction on hypermarket developments in Slovenia yet, although there are some restrictions at getting permissions for setting up hypermarkets in Ljubljana.

The issue of sustainable consumption is not very high on the agenda in Slovenia and therefore not many actors are involved in this subject as such. Nevertheless, with the indirect mechanisms to divert existing consumption patterns, national and local government officials are involved as are some non-governmental organizations.

Programmes and Projects: Slovenia does not have a Strategy for Sustainable Development that could directly address sustainable consumption patterns and identify the ways to promote development of more sustainable consumption patterns. The National Environmental Action Programme was adopted in 1999. It sets the goals for every environmental and main industry sector. The issue of sustainable consumption is not directly mentioned and elaborated in the document. Other strategic development strategies (Strategy of Economic Development of Slovenia, National Development Plan) likewise do not in particular address the issue. Some documents, especially the Waste Management Strategy, Energy Strategy (efficient energy use), Strategy for Reduction of Greenhouse Gas Emissions and Resolution on Strategic Goals in Tourism are nevertheless the documents that aim towards more sustainable consumption in some aspects. They aim to reduce amounts of waste, use of energy and to diminish the negative impact of tourism; the question however remains as to how these strategic documents are being implemented. Guidelines for energy saving and conservation have been established by the Ministry of Economy and some other guidelines or recommendations have come from different industrial sectors within the Chamber of Commerce and Industry of Slovenia.

No programmes or projects exist which would comprehensively address the concepts, which could promote the development of sustainable consumption patterns by changing the approach at the production side (Life Cycle Assessment, Eco design, Eco services). In the year 2002 the Eco-fund (reference: Darko Koporèiè, deputy director, Eco-fund*)* intends to propose a loan scheme to stimulate individuals to invest in facilities for the utilization of renewable energy. The Energy Advisory Network for households is a programme, which was launched by the

Ministry of Economy and aims to encourage the effective use of energy. The Slovenian Fund for Water Protection is a partnership project of the enterprise Helios, national and local governments and NGOs. The aim of the project is to promote the consumption of less environmentally damaging paint and varnish products and to provide funding for actions to protect water sources.

Status: The trend of consumption patterns in Slovenia is away from what is considered a sustainable consumption pattern. Amounts of waste/capita in the year 1998 were 16 % higher than in the year 1995. The number of cars in use per 100 inhabitants increased from 28,9 in 1990 to 41,8 in 19996 and no data are collected on the average annual distance covered per passenger car (http://nfp-si.eionet.eu.int/indikatorjiu/ISD-nac3w-economic.html). The number of home appliances has increased at a similar rate.

Capacity-Building, Education, Training and Awareness-Raising: In the year 2001 it issued a leaflet about climate change (the target group is the school population). NGOs carry out some relevant activities but also this sector does not perform any systematic awareness raising campaigns. The Consumers' Association of Slovenia has published several brochures on "Green consumption" and in the year 2000 they published a leaflet on various eco-labels available in the EU and its member states. In the comparative tests, which they publish in their magazine, they also include at least two environmental indicators: how harmful the impact of particular product is for the environment and how wasteful the packaging of the products is. In the year 2000 the Consumers' Association of Slovenia conducted an educational programme for the women on farms on how to save water, to reduce the use of chemicals and how to choose energy efficient appliances. The intention is to have such programmes once per year. No special programmes for capacity-building and training exist in Slovenia, which would directly, address the issue of sustainable consumption. Education in curricula at all levels the issue of sustainable consumption is not addressed directly. In Slovenia there is no campaign on sustainable consumption patterns. A few years ago the Ministry of the Environment and Spatial Planning held its first communication campaign on household waste management.

Information: EIONET (http://nfp-si.eionet.eu.int): Slovenia and the Statistic Office of the Republic of Slovenia (http://www.sigov.si/zrs/) provide some indicators, which show the trends in consumption patterns. Slovenia has selected to monitor some indicators related to consumption and production patterns. The statistical data are in many cases outdated (it is not unusual that only the data for the years 1995, 1996 are available), which make the assessment of trends rather difficult. This lack of adequate reporting and statistics is manifested also in the fact that Slovenian responsible bodies have not prepared the Report on the State of the Environment in the Republic of Slovenia since 1995.

Research and Technologies: It was not possible to identify any research on the subject matter. Some publications were written on the issue of consumption and consumerism, but no systematic research on sustainable consumption could be observed in Slovenia.
As for the development of technologies as mentioned above the concepts of Cleaner production, Life Cycle Assessment, Eco-design are not yet widely practiced by the business sector in Slovenia. The producers' and research sphere therefore does not focus their activities or promote the shift towards development of sustainable consumption patterns.

Financing: Not many activities are being undertaken in respect to changing consumption and production patterns. Those that are carried out are financed mainly from the national budget.

Cooperation: Currently the Office for Consumers' Protection and the Ministry for Environment and Spatial Planning are replying to the UNEP survey on sustainable consumption patterns. International cooperation on this subject is rather weak and is mainly carried out by various non governmental organizations. In the year 2000 a UNEP NGO representative was present at the assessment of their report on sustainable consumption.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY

Decision-Making: In early 1996 the National Assembly of the Republic of Slovenia adopted a resolution on the Strategy of Energy Use and Supply in Slovenia. According to this political important but legally non binding document the long-term strategic orientation in the field of energy use is to increase energy efficiency in all sectors of energy consumption. The main objective is to secure the provision of reliable and environmentally friendly energy services at least costs. In quantitative terms the Strategy attaches a high priority to energy efficiency and environmental protection and sets a target to improve the overall energy efficiency by 2% p.a. over the next 10 to 15 years. To achieve the target mentioned above a sectoral approach and a number of policy instruments have been foreseen. Besides market based energy prices which will, following the European Energy Charter, gradually incorporate also the cost of environmental and social impacts, the Strategy refers to policy instruments calling for intensified political and budgetary support of the following instruments and tools: education and awareness building, energy consultation, regulations and agreements, financial incentives, innovation and technology development.

Although labelling has only been very recently introduced to influence energy efficient equipment, the Slovenian Government had already adopted in February 1996 the "Regulation on energy efficiency criteria, low drinking water consumption and lower environmental pollution for some appliances," where the cost for such equipment can be partially reclaimed from the income tax of an individual consumer. When setting criteria the EU Commission Directives EU94/2/EC, EU 95/C155/07, EU 95/12/EC, EU 95/13/EC and other existing European and international standards were taken into consideration.

The National Assembly of the Republic of Slovenia adopted the new Energy Act On 16 September 1999. The Act includes a chapter on energy efficiency. The provisions on energy efficiency define the followings: the principle of worthiness or equivalence (whenever an energy supply option is equivalent in cost terms to an energy-saving option in the performance of a service, the energy-saving option should be given preference); the role of the state and the responsible ministry through defined programmes for promoting and supporting energy efficiency; the role of local communities in supporting energy efficiency; the role of utilities with the basic principles of DSM; the legal basis for energy labelling; the legal basis for minimum efficiency standards; the legal basis for the energy certification of buildings; and the need for the systematic evaluation of programmes for supporting energy efficiency.

According to the Law, 18 months after the Law was adopted the Government should provide a National Energy Programme. This document should set more specific targets and political frameworks also for activities in the fields of Energy Efficiency (EE) and Renewable Energy Sources (RES). The activities within the National Energy Programme however first started in summer of 2001 and completed recently in the year 2002; thus at the moment we are not able to give any information on its outcomes.

Programmes and Projects: *Energy advisory network ENSVET for households:* The ENSVET programme started in 1991 with the background activities for establishing the Energy Advisory Network (ENSVET) with the support of the bilateral Slovenian-Austrian (Styrian) initiative. Within this initiative the general scheme of organization of the Energy Advisory Network in Slovene (ENSVET) was developed and the first generation of energy advisers was educated. In 1993 the first group of 6 energy advisory offices was established. During nine years of the ENSVET project, 27 energy advisory offices and 6 subsidiaries have been established following municipal initiatives and support. The Energy Advisory Network is now uniformly dispersed all over Slovenia, with average distance from the customer to the office not exceeding 20 km. The advice provided is free of charge for the customer.

Energy advice to larger industrial energy consumer: A pilot project of providing energy advice to larger industrial energy consumers started in 1997. The project focuses on industrial enterprises with a yearly energy bill between 0.5 and 5 million ECU. The aim of the project is to increase information and awareness and to activate internal potentials for energy efficiency actions. The advice includes a walk-through-audit of a company, a senior management event and an awareness event for employees. One of the project outputs is also an analysis of energy consumption and costs, suggestions for immediate actions and proposals for further activities. When appropriate, an energy audit is recommended. Under the pilot project, 12 enterprises accounting for approximately 6% of the total

energy costs in industry have been advised. Because of the attractive results a further 36 industrial companies and public institutions were given advice in the years 1998 and 1999.
Local energy concept: Implementation of local energy concepts focus on different options on the energy supply side such as: district heating, introduction of gas supply, combined heat and power production, biomass, solar energy for hot water production and other sources as well as different options of energy efficiency on the demand side. The Ministry provides grants of 50 % of the cost of a project. To date, besides two pilot concepts, 22 other local energy concepts have been prepared.
Energy auditing programme: The energy auditing programme is aimed at introducing energy management and promoting energy efficiency investment in the industrial, commercial and public sector, and in apartment block buildings. An energy audit results in a list of proposals for organizational measures and investments. It presents a basis for developing a strategy to reduce energy consumption and increase energy efficiency. The audits have to be performed according to established methodology. The audits are subsidized up to 50% of the total costs. Evaluation of the energy auditing programme shows that the energy costs of audited companies account for 9% of the total energy bill of industry. The measures proposed enable an average reduction of each energy bill by 15%.
Demonstration programme of energy efficient technologies. In conceiving the programme of demonstration projects, we shall apply the results and experience gained from the PHARE project "Demonstration projects for energy efficiency investments in the buildings and industry sector," which was completed in 1997. Six demonstration projects were carried out, one half of them in industry, and the rest in a hotel, in a school, and in a hospital. See also under **Financing**.

Status: See under **Programmes and Projects**.

Capacity-Building, Education, Training and Awareness-Raising: For industrial participants, a number of seminars, workshops and training courses have been organized in the last five years, on the topics of: energy auditing, energy management, energy efficiency in SMEs, safe and economic operation of boilers, efficient compressed air systems, and financing of energy efficiency and cogeneration projects. The implementation of this programme was particularly intensive in the past three years, when 123 participants from 85 industrial companies attended 5 one-week training courses for energy managers, and 89 consultants from 52 companies participated in 3 one-week seminars for execution of short and extended energy audits.
Energy efficient lightning: To increase the awareness of energy efficient lightning in the household sector a number of 10.000 energy saving lamps were disseminated free of charge to households, accompanied with a strong awareness campaign.
Other programmes: Within the THERMIE Programme two workshops have been organized: "Co-generation and District Heating Financing" and "Special Boiler Programme," which look into the potential of efficiency improvements by low cost measures at key sites.
With the financial support from the SAVE Programme a workshop "Energy Rehabilitation of Residential Buildings in Slovenia" was organized to discuss the national programme for energy restoration of dwellings in Slovenia.
The SYNERGY Programme has funded a workshop "Financing Energy Sector Investments" and a seminar "Financing of energy efficiency investment projects" in order to prepare energy efficiency investments."
The city of Maribor is participating in the ECOS/OUVERTURE Programme "Improvement of Urban Energy Efficiency Through Multilateral Co-operation and Development of Networks."
With financial support from EU 5th FP for RTD and Demonstration and from the Slovene national budget, a project "OPET Slovenia - Member of OPET Network" started in 2000. It represents the continuation of FEMOPET Slovenia. See under **Programmes and Projects.**

Information: Information, education and promotional activities are carried out by means of publications, seminars, workshops, exhibitions and similar events organized by scientific institutions, expert and consulting companies, NGOs of professionals and environmental NGOs. The energy efficiency newsletter plays an important role. It is a central information and promotional periodical published by the Agency for Efficient Use of Energy. It is aimed at improving the level of information and coordination of activities of numerous organizations and individuals, which

may potentially contribute to the realization of the set goals of the energy strategy. For the general public some 38 leaflets were issued related to energy efficiency in buildings and household appliances. In addition to the above, a series of booklets for the promotion of energy efficient technologies and procedures should be mentioned. In order to support the capacity for know-how transfer in the field, to intensify Cupertino of both domestic and foreign experts, since 1998 the government has supported a national network (FEMOPET) of experts, market actors and end users for the implementation of sectoral promotion strategies of new and innovative energy technologies and procedures including provision of advice and assistance. Periodically environmental NGOs are being supported in dissemination of the basic information on EE and RES during their campaigns and projects in the fields of climate and air protection.

Research and Technologies: We have been only able to collect data for research programmes in 2001. The estimated value of financing research teams and projects on the field of energy efficiency and renewable energy is approximately 88 MIO SIT or 350.000 US$. This represents approximately 15% of the financing of R&D in the field of energy. Main research topics are energy efficiency in industry, photovoltaic and the chemistry of insulating covers. About 40.000 US$ is coming from industry and some 20.000 US$ are representing investment in equipment. A roughly estimated figure for R&D activities in the field of energy efficiency and renewable energy in 2000 is also some 350.000 US$, while in 1999 this figure was about 300.000 US$. The annual budget spending between 1995 and 1998 for the activities in the filed was around US$200.000.

Financing: After independence in 1991, the former Ministry for Energy started to introduce programmes for efficient energy use. These included studies, programmes and investment project for efficient energy use, renewable energy sources, combined heat and power production (co-generation), demonstration and pilot projects. Since then support has been granted under different schemes which had in common that all proposed projects had to be submitted to a general tendering procedure for the funds allocated each year from the national budget. Altogether the Ministry of Economic Affairs spent some 15 MECU from 1993 when it took over the responsibility for energy policy until spring of 2001 when this was transferred to the Ministry of Environment. Around 3/4 of this amount- issued for direct support of the rational use of energy and renewable energy through public tendering - were related to investment projects, and the rest for studies and programmes. The majority of the investment projects involved joint financing of investments in energy efficiency in industry and the construction of small hydro power plants. The studies and programmes component encompassed projects such as the setting up of an energy advisory service for households, energy consulting for companies and institutions (energy audits), energy consulting for local communities (energy concepts of towns and settlements), and information, promotion and exhibition programmes. Several of these projects have been supported by Phare financing.
Slovenia has introduced the following financial incentives for small energy saving measures in households:
Loft insulation. In the “Loft insulation” project a number of 355 financial incentives for existent loft and attic insulation were paid out including 17 households in apartment blocks and 338 households in one family building.
Draught proofing: In the “Draught proofing project” a number of 945 financial incentives were paid out.). Energy savings are estimated up to 10%.
Oil burner adjustment: In the “Oil burner adjustment project” a total of 1480 oil burners were adjusted with average energy saving of 2,5% and pay back period of less than 2 years.
Energy efficient glazing/windows: In this subsidy scheme a number of 1400 financial incentives were paid out in last two years.
Financial incentives for energy efficiency investments: The Government promoted the implementation of a number of projects in the period from 1990 to 1995, both in the industrial sector (in an amount of 16 million ECU) and in the commercial and public sectors. A variety of financial instruments were applied: soft loans, subsidized interest rates, and subsidies. In all, 53 investment projects were supported, of which 30 were in the industrial sector. In the industrial sector, the granted funds were spent predominantly for the improvement of technological processes, waste heat recovery, variable speed drives, combustion control, energy management systems, and fuel switching. In the field of the development of energy efficient investment, feasibility studies were also supported.

Revolving fund for energy efficiency investments: An energy efficiency investment fund was established in January 1998. The goal of the fund is to provide industrial enterprises, institutions and building managers with financial resources under attractive interest rates, and thereby, to decrease energy costs in the long term. The Bank of Austria selected in a public competition manages the fund, which is supplied from a mix of financial sources. In this manner, a rational granting of loans will be secured. The initial fund balance is 12 million ECU. The fund operates on a revolving principle. The planned term of operation of the fund is ten years.

Cooperation: Besides the financing of the energy efficiency programmes from the State budget the Ministry of Economic Affairs and Agency for Efficient Use of Energy established an intensive international cooperation with European Union programmes, such as: PHARE, THERMIE, SAVE, SYNERGY and ECOS/OUVERTURE, as well as through bilateral cooperation with several countries. With the projects listed below, full complementarily is achieved with the programmes supported from the state budget. The great value of these projects is in the transfer of EU experience to Slovenian beneficiaries and in the value added contribution to the existing programmes.

PHARE Programme

Slovenia was integrated into PHARE Programme in August 1992. The energy sector received support for the first time in 1993. Since then the following projects have been carried out: "Development of Legal, Regulatory and Institutional Framework of the Energy Sector in Slovenia," "Energy Conservation Strategy for the Republic of Slovenia," "Integrated Resource Planning for the Rational Use of Energy in Slovenia," "Feasibility Study on Establishing of the Revolving Fund," "Demonstration Projects for Energy Efficiency Investments in Building and Industry Sector," "Energy Audit and Training for Energy Auditors," "Support for the Agency for Efficient use of Energy," "Energy Saving Fund," "Information and Awareness Building Campaign," "Technical assistance for Institutional Strengthening for Enforcement of Safety, Health and Efficiency Standards in the Building Sector of Slovenia," and "Demand Side Management in the Electricity and Gas Distribution Sectors of Slovenia."

As part of the bilateral cooperation between the Netherlands and Slovenia a study "Direct Load Control for Large Industrial Consumers in Slovenia" has been prepared. Within this project a feasibility study of load levelling of the biggest industrial companies on the level of national transmission utility was analyzed and functional implementation for a load management system was given.

Within the Joint Slovenian and Austrian Energy Initiative, the following projects were carried out: Implementation of a System of Multi-regional Energy Balances for Slovenia, Municipal energy concepts of two cities Nova Gorica and Kamnik, Energy consulting network for buildings and households, Seminar for energy management, Energy analysis of the Paper mill Vevèe, Solar collectors by the do-it-yourself method, Billing of heating on the basis of actual consumption

Within the TRANSFORM Programme of the Federal Republic of Germany a project on Third Party Financing in the public sector of Slovenia is performed. Within the project it is intended to execute a pilot project on Performance Contracting in the public sector. It is intended to demonstrate the new financing mechanism for achieving the energy saving potential in the public buildings.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: Responsibilities for transport policies and management are divided between different ministries and administrative levels as follows: The Ministry of Transport (MT) is the responsible authority for road and railway infrastructure and traffic, the Ministry of Environment and Spatial Planning (MESP) is responsible for monitoring emissions from the transport sector, the spatial planning of national transport infrastructure and for preparation of location schemes. The municipalities on the basis of national plans plan other transport infrastructure; municipalities are also responsible for local public transport (E, 141).
The field of transport is governed as an integral whole by individual acts concerning road infrastructure, road transport, railways, maritime and air transport (D, 184). Since 1992, the Ministry of Transport has adopted 50 regulations. The Environmental Protection Act (EPA) provides for important regulations and other measures to ensure that environmental concerns are considered in transport planning and traffic management. Thus, the EPA is the legal basis for ambient air quality standards, noise standards, rehabilitation/sanitation programmes, and the application of the polluter-pays-principle by introducing pollution charges and the need for environmental impact assessments. In 1994, emission standards were issued requiring catalytic converters for new vehicles. Annual car taxes are contingent upon engine size. In 1995, a decree on the quality of fuels as regards sulphur, lead and benzene concentrations was issued, based on EU directives. Some environmental taxes have been introduced in the transport sector, like a CO2 tax on liquid fuels. The potential for internalizing the external costs of transport by introducing economic instruments is considered a strategic variable in this connection. Present fuel taxes are substantially lower than in neighbouring countries (E, 139-145). Slovenia has signed a transport agreement with the EU, thereby committing itself to developing appropriate transport infrastructure for transit traffic, covering road, railway and combined transport. The agreement includes essential legal and administrative policy instruments like taxation and technical measures, and cooperation in developing a transport system, which meets environmental, needs (E, 144).
In accordance with the second protocol on sulphur, Slovenia has assumed the obligation to reduce annual SO2 emissions to 93.000 tons in total and to 70.000 tons by 2010. In accordance with the Kyoto protocol, the obligation of Slovenia is to reduce greenhouse gas emissions by 8% on average between 2008 and 2012 with regard to 1986 as the reference year.
The EPA specifies public participation in the environmental impact assessment process with regard to procedural questions: public presentation of the draft decision, participation in discussion, public hearings, and announcement of the final decision. An important policy for cost-effective provision of transportation services is to introduce competition wherever possible. Competition within the market (it typically refers to competition where firms compete for the same services, namely transport between two points) is more feasible for the supply of transportation services. Competition for the market (it refers to competition where firms compete for the right to provide service for a given period of time under concession) can bring efficiency gains in many areas of provision of infrastructure management.

Programmes and Projects: There are several national programmes, such as for motorways, roads, railways etc. But, there is lack of synergy and strategic and long-term documents by which the development of the transport sector would be carried out. Therefore the government is preparing a transport policy for the future aimed at offering adequate access while simultaneously minimizing the environmental impact of transport. Resolution on Transport Policy of the Republic of Slovenia, the draft plan, presents a comprehensive package of measures (G; E, 144). However, long-term transport planning is actually defined in non-transport strategic documents, such as the National Spatial Plan (1986-2000) or Strategy of Economic Development of the Republic of Slovenia, National Development Programme 2001-2006. The social-economic aspect of transport is discussed in the Strategy of Economic Development of the Republic of Slovenia, the environmental aspects in the National Environmental Action Programme (NEAP), the spatial planning aspects in the old National Spatial Plan of Slovenia. The Regional Development Strategy of Slovenia and the new National Spatial Plan have been prepared. The new National Spatial plan will define infrastructure development of specific transport subsystems and the transport system as a whole. The draft Resolution on Transport Policy puts forward objectives for transport systems, economic and social

aspects, and environment and traffic safety. For transport system the following are suggested: providing an adequate level of mobility; enabling smooth transit traffic and preventing unnecessary traffic; diverting passenger traffic to public transport and freight from road to rail and/or combined transport. The plan suggests the following economic and social goals: preserving social security for employees in the transport sector; promoting EU guidelines on the harmonization of terms of competition and free access to the infrastructure, and adapting the quality and service of the national transport infrastructure step by step to those of the EU; linking urban and rural areas with sustainable transport modes, including integration of demographically endangered areas as well as specific and socially endangered people. Several goals are suggested with regard to the environment: using land rationally and preserving the characteristic features of landscapes and biodiversity; curbing air pollution; solving the problems involved in the recycling of scrapped cars; ensuring the safe transport of hazardous goods; reducing noise emissions from road and rail transport; preventing pollution from maritime transport; changing the modal split; raising public awareness about the environmental impact of transport (E, 141).
The position of Slovenia in the international flow of goods and services and the country's goal to prevent depopulation of rural areas and to promote harmonized polycentric development dictate construction of adequate road infrastructure and maintenance of existing infrastructure. The construction of motorway infrastructure is defined in the adopted National Programme of Motorway Construction in RS (Republic of Slovenia). Renovation and maintenance of the present road infrastructure is defined in plans and annual operational plans. The long-term strategy of railway infrastructure development is defined in the National Programme of Slovene Railway Infrastructure Development (O, 241). Also the National Programme of Maintenance and Development of the National Roads has been in preparation. All these documents include environmental considerations (NEAP, 68). In general, city transport is being developed according to short-term sector programmes to the advantage of personal vehicles. In order to have a less polluting and safer transport system, transportation technologies, impacts on the environment, and safety have been addressed comprehensively (G).

Status: In Slovenia the share of transport in GDP was 2,8% in 1995 (O, 241). Analysis of the status of transport infrastructure and trends shows that, despite different planning definitions, Slovenia gives high priority to road infrastructure as a result of the intertwined influences of its geographical position, large daily migrations, transit traffic, and ever increasing number of private vehicles. In the period between 1985 and 1998 the number of private vehicles increased from 500,000 to around 800,000 (i.e., by 60%, while the road network by 6%) (I, 21). At the same time the modal split has changed from public to private transport and from rail to road, for domestic, international, as well as transit traffic. In particular the number of short distance car trips (from three to ten kilometres) has increased, at the expense of public transport and cycling (E, 137). The characteristics of Slovenian transport system are: a lack of balance (domination of road transportation over railway and public transportation), poor quality of public transportation (poor connections and services), only 2 % of all passenger travels by railways, high density of roads and low level of their quality, rapid construction of highways, poor quality of railway network (only 42% of railway is electrified, only 28% are double track lines), exceeded capacities of the road's infrastructure (especially in areas around major cities and along the V. and X. transport corridors), low road safety (although it has improved over the last few years) (S, 105-106). Individualization of transport has increased the cost of transport, consumption of energy, inadequate land use, construction of dispersed settlement in the countryside, degradation of city environment.

The transport sector consumes approximately one third of the total consumed energy and is one of the largest consumers of non-renewable energy sources. Road transport consumes approximately 80% of petroleum products consumed in the whole transport sector. According to estimate, 50% of all emissions are caused by traffic as a whole, while road traffic generates approximately 80% of CO emissions, 30% CO2 and 60% of all NOx emissions. In spite of dramatically increased consumption of unleaded gasoline, renovation of the vehicle fleet and use of catalytic converters, the level of NOx, CO and CO2 emissions is, generally speaking, still the same (O, 252). From an environmental aspect preferential and emphasized reliance on road transport is particularly negative. Therefore, it is crucial to reduce traffic-generated emissions, to accelerate the modernization of rail traffic (for passenger and freight transport), and to make public transport and cycling more attractive. The environmental pressures of road

transport could be more evenly distributed in space and reduced over time by the modernization of the secondary road network, giving support to other means of transport, more evenly spread telecommunication development, and more balanced regional development. It is mandatory to establish a sufficiently dense network of high quality public passenger transport, as well as the regional and local transport network. This issue is dealt with in detail in the preparation of the new Slovene Spatial Development Strategy (I, 21).

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

Information: Collecting and processing of data which are in connection with transport is carried out by the institutions, like Statistical office of RS, Railway Company of Slovenia, Ministry of Transport - Railway Directorate of RS (http:/www.sigov.si/mpz/4pod/3/2z.html), and - Roads Directorate of RS, Ministry of Environment and Spatial Planning - Hydrometeorological Institute of the RS etc.

Research and Technologies: No information available.

Financing: In the annex to the transport agreement with the EU, Slovenia explains that, to complete the construction of infrastructure mentioned in the agreement, an estimated sum of US$ 4billion would have to be available. From 1994, when the National Motorway Construction Programme started to be implemented, to the 1999 264 km of motorways and other roads have been built or are being built and 1 billion of US$ was invested (D, 184). During the construction of the motorway backbone, 10,5% of investment funds was invested in environmental protection (O, 253).

Cooperation: The Ministry of Transport is responsible for the implementation of numerous conventions and international treaties in connection with air-traffic, maritime transport, railway, roads, and road traffic. The Ministry also takes part in the activity of various international associations and unions related to transport (I, 33). Slovenia has signed several international protocols for protection the air.

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CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: The Ministry of Labour, Family and Social Affairs (MLFSA) is most directly concerned with demographic issues. There are also other ministries working in this field, and they include the Ministries of: Health; Education; Science and Sport; Economic Relations and Development; and Internal Affairs, Government Office for Immigration and Refugees; and Government Office for Equal Opportunities. In 1993, the Government established the National Committee for population Policy within the MLFSA. The MLFSA actively promotes programmes and initiatives with all kinds of NGO. By public invitations, it assigns funds for their realization and development.
A bill of law to strengthen the participation of women in decision-making has been submitted to parliament. The basic provisions governing the equality of men and women are laid down in the chapter on human rights and basic freedoms of the Constitution of RS (D, 210). This field is or will be directed by the Labour Relations Act (it introduces the protection of pregnant women and mothers after childbirth), the Parenthood and Family Earnings Act (it will introduce the individual right to a three-month parental leave for either parent) and the Equal Opportunities Act (D, 214). An act, which is currently in the preparation phase, will allow official marriages of homosexual couples (RE9, 66).
Social security: the Health Care and Health Insurance Act regulate Health insurance in Slovenia. Its principal novelty is the introduction of compulsory and voluntary health insurance schemes. Under the compulsory insurance scheme the insured persons are provided for systematic and other preventive check-ups of children, pupils, students involved in regular schooling, women in connection with pregnancy, health care of women in connection with consulting related to family planning, contraception, pregnancy and childbirth and so on (PR, 34). The Family Income Act states that the overall child allowance is paid to cover a part of the burden for raising children; the amount differs depending on the age and number of children in a family, and it will total 1.1% of the GDP per annum (I, 13). For demographic development there are also other important laws, which are or will be adopted: the Aliens Act, the Act on Employment and Work of Aliens, the Act on Mutual Recognition of Professional Qualifications, the Social Security Act, the Housing Act, the Health Services Act etc. (D, 328)
Balanced regional demographic development: The Local Government Act presents a base for decentralization of decision-making and mobilization of local development potentials. The new municipalities must be responsible for primary schooling, good social infrastructure and adequate health care for citizens, provision of basic services for living etc. The intermediate level between state and municipalities is to be defined by the Act of Provinces, which has been in the preparatory stage for a long period of time (RE9, 32). Until the time regions are established, the Promotion of Balanced Regional Development Act (1999) introduces agencies for regional development as central instruments for promoting balanced regional development. The Act also defines the objectives, principles, and organization of promoting balanced regional development, the allocation of development subsidies, and criteria for defining the areas with special developmental problems (I, 36). According to criteria defined in the Act, regions facing development problems are divided into three types: economically weak areas; areas with structural problems and high unemployment rates; and areas with limited opportunities for development (RE9, 38). The Agency of the RS for Regional Development (1999) has the most responsibility for promoting balanced regional development.
Demographic and family policy: As stated in the Economic Development Strategy of Slovenia (EDSS), the current situation regarding demographic trends calls for the development of an active demographic policy with its minimum goal to prevent a fall of the population's fertility below the level of simple reproduction (RE9, 67). EDSS (1994) gives seven objectives to those who are responsible for demographic and labour policies: to put into force health as a social norm and strategic good; long-term maintenance of population size; to raise the fertility above or close to the level of simple reproduction; to put into force a social norm to have two or three children per family; to reduce the rate of mortality to the level of developed countries; to harmonize migration policy with the migration policy of the EU; and long-term balancing between inflow and outflow of labour (S, 78). The MLFSA and the National Committee for Population Policy are preparing an Action Programme on Population and Development, which will be completed soon. The Government Office for Immigration and Refugees is preparing the Resolution of Immigration Policy of RS (V, 130). Family policy is organized by ministries and implemented by numerous measures within other policies (housing, schooling, health, social policy). The link, connecting various parts of

family policy, is the Resolution on the Guidelines of Family Policy Development (1993). Family policy is understood as the entirety of social, economic, legal, educational, medical, fiscal and other measures, carried out by a certain political and administrative system in order to influence, directly or indirectly, the living conditions of families and/or their members, their emergence and development. Family policy is carried out indirectly by measures like scholarships, students' meal subsidies, subsidies for the costs of kindergarten and transportation to school, and directly by the benefits such as child benefit and child care supplements (PR, 38).
Balanced regional-demographic policy: Slovenia has pursued its regional policy and the policy of polycentric development since early 1970, the aim of which is to balance the development of all parts of Slovenia. Regional policy in the 1990s, which was based on the promotion of the demographically threatened areas, was partial and largely inefficient. Moreover, the coordination between selected ministries and their sectoral policies is poor. The White Paper on Regional Development in Slovenia (Strategy of Regional Development) as well as the law on more coherent regional development of Slovenia is being adapted, together constituting the new regional policy. The policy's principles and instruments should be integrated and harmonized with the standards of the EU Member States. Further, the Policy should be market-oriented and based on the principles of endogenous, self-sustained development. Greater coordination with the principles, strategies and measures of selected sectoral policies, which are crucial to regional development, should also lead to improving its efficiency (RE8, 75).

Programmes and Projects: Integrating demographic and family policy into different national programmes. National programmes which deal with those issues important for demographic development are: the Strategic Objectives of the Labour Market and Employment Development up to the Year 2006, the National Action Programme for Employment; the National Assistance and Services Programme for the Period up to the Year 2005; the National Housing Programme; and the National Health Programme up to the Year 2004 (PR, 64-66). Also the new Spatial Plan for Slovenia, which is in a consultation phase, will take into account current demographic trends and the state of broader social development. By the integration of specific issues and topics into the policy of a certain sector, experts and representatives from practically all ministries are engaged. From the beginning, those issues, which will be integrated into other policies, should take into account the principles of sustainable development.
The MLFSA actively promotes programmes and initiatives with all kinds of NGO. By public invitations, it assigns funds for their realization and development.

Status: Birth rate, life expectancy and net migration. The population of Slovenia has remained static recently: the birth rate is decreasing while life expectancy and the net migration balance are increasing slightly (RE9, 41). In 1993, a negative natural population increase was recorded for the first time in recent history. It was more evident in 1997, deteriorated further in 1998. Simultaneously, net migration has been slowing since the 1980s and was negative in 1991 for the first time. As a result, the Slovenian population has been static for several years and is also becoming older. According to statistical data, 16,8 % of Slovenians were below the age of 14 in 1998 and 13,4 % were older than 64 (RE9, 65-66). In the near future the ageing Slovenian population will cause a series of negative consequences, the most important being the lower proportion and ageing of the active population. The key reasons for the low birth rate lie in economic crises and the high unemployment rate, non-availability of suitable housing, high expenses for child-care services, inflexible working hours, a highly competitive labour market in which a woman may be forced to enter a employment contract that forbids her from having children; an important reason is also the development of individualism. Hence, in order to be able to record a higher birth rate enabling the renewal of generations, a number of measures helping young people to decide to have more children would have to be introduced. Migration policy is therefore the only measure at the moment that can change demographic developments in Slovenia. This is true of external (rising in number) and internal (distribution) migrations. Just to maintain the existing number of inhabitants, about 5.000 people should immigrate each year in a couple of years. After 1991, when the migration flows from ex Yugoslavia stopped, migration flows of mixed political and ethnic backgrounds appeared. In 1992 and 1993, Slovenia received more than 30.000 refugees from Croatia and Bosnia and Herzegovina. Actually, about 8.000 of them still remain. Since 1995 they have been included in the total population of Slovenia. Slovenia also faces a strong flow of illegal migrations; in most cases, immigrants wishing

to continue their illegal journey through to Western Europe (RE8, 20, 21). By the presumption of stable economic development and an adequate level of social and health provision for the majority of people, Slovenian demographic statistic to the year 2020 predict an increase in life expectancy from the present 71,7 for man and 78,7 for women to 74,1 for man and 81,2 for women.

Trends in family structure: For quite some time now, Slovenia has witnessed changes in the lives of families and married couples, a phenomenon typical of modern societies characterized by constant changes in socio-economic conditions. Hence, the average number of household members is declining, as well as the number of marriages and the number of children per woman (1.3 children per woman in 1996), the number of children born out of wedlock is rising (33% in 1997), as is the average age of mothers having their first children (25.0 years in 1998), while the number of divorces is falling (RE8, 18). More and more households are emerging that do not represent the traditional nuclear family with two parents and children but are structured differently instead; frequently they are smaller (e.g. single-member and lone-parent households) as well as temporary (e.g. partnership households or single-member households following the partnership dissolution) (PR, 107). However, the norm is still a two-generation household with both parents and children. The number of lone-parent households is rapidly increasing. The main reasons for this are divorces and to a much less extent the decisions of women to live only with their children. Women who take care of their children themselves are highly vulnerable in the area of finance, job, career, training, education, and spending free time. Therefore, this group of people needs a lot of support and all kinds of help. The marriage rate in Slovenia is among the lowest in Europe, coming near to the Scandinavian countries and Austria. Apart of this, Slovenia has also the lowest divorce rate, but it is tending to rise. Almost each fourth case of marriage ends in divorce. In Slovenia we are noticing a relatively high proportion of lone-parent households. This fact indicates that the divorce/separation rate is much higher than the statistics show us. Younger generations postpone getting married, and more and more Slovenians co-habitat. One of the reasons for this is that older children live longer with their parents, often owing to the longer duration of education. These factors, together with poor opportunities to find adequate housing, cause young people to miss the beginning of the reproduction phase.

Labour and jobs: In the field of labour and jobs we are faced with rising international mobility of the labour force on one hand and with changing of working modes and conditions on the other; all of these are primarily caused by improvements in technology and information. Certain groups of people (the elderly and unskilled) already have or will have difficulties with employment. We are noticing the tendency of the dispersion of jobs and the employment of individuals (tele-work) as well as the concentration of jobs in the service sector. In the socio-economic structure of the population the tendency of middle-class reinforcement is evident, but also the class of the poor and socially excluded is increasing. Growing social inequality on one hand means some incentives, but on the other brings many conflicts and weakening human potentials through social exclusion, such as the education and qualification structure, consumption, birth rate, human relationships etc.

Spatial distribution of people: In Slovenia two basic groups of settlement patterns were formed. On one hand, relatively highly urbanized areas in plains and valleys, which are subject to intensive suburbanization, and on the other peripheral areas, which are increasingly subject to depopulation and the decay of the cultural landscape (O, 277). Slovenia is characterized by a moderate (official) rate of urbanization (approximately 51% in 1991), an above average concentration in suburban areas (two thirds of the population inhabit 12% of the land), and a static and ageing population in two thirds of the Slovenian territory (I, 17). Regional development policy in the 1990s has not been sufficiently effective. Apart from traditional disparities between more or less developed areas, new forms of disparities have also appeared. These include the crisis in old, traditional industrial and mining areas. Depopulation and, consequently, economic lethargy, in numerous less attractive border and mountainous areas also raises concern. In addition, the disparities between bigger towns and urbanized areas on one hand and remoter rural areas on the other are increasing again. The most favourable conditions are in municipalities with prevailing tertiary or tertiary-secondary sectors, while the worst situation is found in those areas where agriculture is a predominant activity; areas, which are remote and less accessible, are also at a disadvantage (RE9, 35).

Capacity-Building, Education, Training and Awareness-Raising: MLFSA each year brings out public invitations within the framework of programmes for family promotion; priority is giving to NGOs. In this way MLFSA stimulates preparation and development of certain NGO programmes.

Information: Demographic and social-demographic data are being collected by the Statistical office of RS, the Pension and Disability Insurance Institute, the Employment Service of Slovenia, the Health Insurance Institute etc. Existing statistical databases are being collected and completed regularly, however gradually and partially, for different and independent purposes. In some cases this can lead to a degree of discrepancy among different demographic and social-demographic data from different databases.

Research and Technologies: The MLFSA each year allocates some funds for research, development, evaluation and other projects, to analyze the situation and develop questions in certain areas, to monitor the situation, to prepare the foundations for setting up systems measures in certain areas, and monitor implementation efficiency.

Financing: According to the 1998 estimates, the funds of the then Ministry of Economic Relations and Development allocated exclusively for the promotion of regional development amounted to 0,05 % of GDP. The funds of the Regional Development and Preservation of the Slovenian Rural Population Fund reached 0,06 % of GDP. The total was therefore more than halved compared to 1991, when around 0,25 % of GDP was spent on regional development promotion (RE9, 35).

Cooperation: The MLFSA and the National Committee for Population Policy actively support the activities of Slovenia's office of UNICEF. Each year there are some funds allocated for them, on top of their opportunities to compete with their programmes in the public invitations of MLFSA.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: The linkage of health with environmental and socio-economic improvements requires coordinated intersectoral efforts, in order to enable people in their communities to ensure sustainable development. Particularly relevant in Slovenia is the inclusion of preventive programmes that with their educational emphasis can enable the shift of perspective back to individual responsibility, and away from relying solely on remediation and treatment. Slovenia is aware of the need to develop effective plans for priority actions, which are based on cooperative planning by various levels of government, non-governmental organizations and local communities in the area of health.

In order to implement the programmes of Agenda 21, the National Assembly ratified the National Programme or Health in 1999, and its Coordination Body - The Health Council of the Republic of Slovenia was founded in the June of 2000. It operates as a constituent body of the Ministry of Health and deals with matters related to the preparation, coordination and implementation of acts and regulations which govern the area of human health, especially the linkage of health, environmental and socio-economic improvements. According to the First International Conference on Health Promotion, Ottawa, 21 November 19961, and its CHARTER for Action to Achieve Health for All by the year 2000, Slovenia has became aware of the necessity to observe Health and its promotion as an intersectoral matter that can not be separated from other goals. The inextricable links between people and their environment constituted the basis for a socio-ecological approach to health. Currently in Slovenia the area of protection and promotion of human health is regulated by various laws and sub-laws, including some particularly important ones: the Law of Health Activities (Ur.l. No. 9/92) with its modifications in 1995, 1996, 2000 and 2001; the Law of Health Service (1998/1999); the Law of regulation of insurance companies (Ur.l. No.13/00); and, the Law of Health Care and Health Insurance (Ur.l. No. 9/92). Health promotion policy requires a diverse but complementary approach including legislation, fiscal measures, taxation, and organizational change. Slovenia started the process of implementation with its independence in the early nineties and as a candidate country, it is currently harmonizing its legislation with that of the EU. One of the biggest problems from the point of legislation is the overlapping of certain responsibilities on one hand and some significant gaps on the other.

Because of the diversity in legislation in Slovenia, the National Action Plan for Health was implemented separately from The National Environmental Action Plan, as has been the practice in some other European countries. Legislation on protection of the environment would need some modification, especially regarding the effects of the environment on human health and evaluation of health risks as is already established practice in some Scandinavian countries.

At this point we are at the threshold of establishing and including Health indicators into the Strategy for Sustainable Development to monitor its implementation. As such we still need to clarify the consequences and the costs of environmental effects on human health as well as the financial load on the economy.

Programmes and Projects: The Ministry of Health and the Ministry of Environment are both responsible for supervision of the implementation of local action plans. Sanitation presented the weakest link in the rural areas, however with the help of PHARE programme Slovenia has started to resolve the problem. The new paradigm in public health is slowly starting to find its way in Slovenia. Its roots are in the bio-psychosocial model of human health as a next stage in the biomedical model. It is the answer to the rapid development of our society. The importance of preventive and educational programmes began in the early nineties as a lot of effort has been invested through the preventive CINDI programme to raise the awareness of medical staff and the general public in reducing cardiovascular incidences as well as other accompanying diseases and risk factors of the modern age, such as diabetes type II, hypertension, obesity, smoking etc. At the same time the educational programme of Healthy Schools began in 1993. The teams from the schools coordinate and implement the programme under the supervision of the Institute of Public Health. Particular attention has been directed towards food safety.

Control of communicable diseases: The Law of Infectious Diseases (Ur.l. No. 69/95) defines communicable diseases that represent a threat to Slovenians. The programme area is supervised by the Ministry of Health, the Institute of Public Health and by nine local institutions for health care according to the Law of Health Activities.

According to the Law of Data Collection, all infectious diseases have to be monitored and reported to local health care institutions. Immunization is regulated by legislation for children, youth and vulnerable groups. There has not been a case of polio in the last twenty years and the last case of diphtheria was reported 33 years ago. Currently Slovenia is involved in the programme to reduce measles cases. The occurrence of infection of HIV and occurrence of aids is relatively low in Slovenia as the country's intervention with preventive measures of early detection was fast and effective. The incidence is less than 1 on 1000 in general population, and as well the group with high-risk behaviour does not exceed 5%.

Protecting of vulnerable groups: A preventive programme on stress-management in schools began in 1995 to reduce the high level of stress among pupils. The interventions programme "How to handle the tiger" interconnects children, parents, teachers and doctors. Special educational measures have begun in the last few years to increase the awareness of ecological and environmental issues in schools. The awareness of safe traffic behaviour among youth is relatively low. In 1987 - 96, 67% of all deaths of young people between the ages of 7 and 19 were due to injuries and poisoning.

Substance abuse by high school students represents a serious drain on the country's human resource by eliminating or reducing their ability to participate effectively in the development process. The rapid rate of change in the modern way of life, causing economic and psychological trauma to otherwise stable families is yet another area of dissatisfaction and disintegration. There is evidence of a drastic increase in the use population and a movement to a higher incidence of substance abuse. Alcohol abuse predominates and the use of cannabis is increasing rapidly. In 1995, 14.4% of pupils smoked cannabis, in 1999 the number increased to 24.9%. Preventive measures began in the mid nineties.

In the year of 2000-2001 the seeds of the National Action Plan for Women Health were planted with cooperation from WHO professionals to introduce preventative measures, identify the needs of women and reinforce the cooperation of primary health care with non-government institutions and local communities.

Meeting urban health challenge: In the urban environment there are many factors that affect human health that are outside the health sector. Urban development in Slovenia is associated with destructive effects on the physical environment and the resource base needed for sustainable development. At present local health action plans are in the preparation phase.

Reducing health risks from environmental pollution and hazards: In the last ten years various measures to tackle pollution and health problems have taken place mainly in the hands of the Ministry of Environment and the Ministry of Health. The new network of measuring stations for air pollution has contributed to the evaluation of health risks. The amount of PM 10, being a dangerous air pollutant and important risk factor of some acute and chronic diseases has been measured regularly15. Health risk evaluation measures have been done for most polluted areas such as Mežica and the Krupa River. Currently the book of regulations for indoor pollutants is in preparation.

In the last few years the monitoring of drinking water took place. The amount of pesticide, heavy metals, and microbiological and chemical contamination has been monitored. In 1995 The National Council for Traffic Safety was established. A new Law of Traffic Safety was passed in 1998 that is more rigorous than the previous one especially on the topic of alcohol consumption, speed limits, obligatory use of seat belts, the use of children's seat in the car and helmets for children on cycles.

Status: *Meeting primary health care needs, particularly in rural areas:* The challenges of rural areas are safe water supply, sanitation, promotion of safe food supply and proper nutrition. These challenges have been effectively met by the Institute of Public Health of the Republic of Slovenia and its Local Action Plans. The necessity to prepare the National Strategy for Sustainable Development from the perspective of Human Health in the relation to Environment is evident. The lack of clear Health indicators made it very difficult in the past to follow and measure the effects of sustainable development in the area of health and it is an important priority in the future. The available data are collected at the national level and could be used for the preparation of various analyses of the effects of pollution on human health. Owing to lack of methodology the analyses are still incomplete.

Capacity-Building, Education, Training and Awareness-Raising: As indicated above, several capacity building programmes are currently taking place in Slovenia. Among others they include various lectures, workshops and

other activities for the general population and medical staff especially in the area of healthy lifestyle and proper nutrition. Preventive programmes to enable people to increase control over and improve their heath have recently begun in the public primary healthcare sector to evaluate cardiovascular risk factors under the umbrella of Ministry of Health.
Non-government institutions are active in awareness raising programmes with their campaigns. One of the recent ones is "Slovenia free from GMOs" in order to protect its extreme biological diversity. NGOs are very aware that in order to reach complete physical, mental and social wellbeing, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health as such is seen as a resource for everyday life, and not the objective of living. Therefore, heath promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to wellbeing.

Information: Databases and registers on individual subjects are available at the relevant ministries (health, environment), or at the Institute of Public Health of the Republic of Slovenia. Some data are fully accessible to the public; however some have limited access owing to the need to protect confidentiality.

Research and Technologies: During the preparation of this report, it was not possible to identify research projects carried out in Slovenia, which would focus on the protection and promotion of human health.

Financing: Funding for the activities of protection and promotion of human health comes from the state budget, the European Union, private capital and non-government institutions.

Cooperation: Slovenia actively collaborates with international organizations such as WHO, and countries in the EU. In the last few yeas, there has been a move towards more active cooperation among government and non-government institutions in order to reduce differences in current health status among population groups, and to ensure equal opportunities and resources to enable all people to achieve their fullest health potential.

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CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Decision-Making: Responsibility for spatial and settlement management is divided between the Ministry of Environment and Spatial Planning (MESP) and other (sectoral) ministries and local authorities.
Spatial planning (with public utilities services) is one area where municipalities have the greatest decision-making power (NEAP, 92). Slovenia's legal framework for spatial planning is not yet in its final format. Slovenia has a legal framework (i.e., Environment Protection Act, Urban Planning and Land Use Act, Construction Land Act, Natural and Cultural Heritage protection Act, etc.), whose aim and principle is sustainable development, but the secondary legislation for implementation and implementation monitoring is not yet completed. With respect to the changes in the political and economic system and the period of transition from the self- management type of socialism to a market democracy, various spatial planning acts are under preparation to harmonize this activity as a whole with the new constitutional provisions, such as political pluralism, private ownership, market economy, as well as new relations between local communities and the state. Also very important is the preparation of the new spatial planning act (I, 18). With the adoption of the new Housing Act (1991), Slovenia steered its housing policy into a new direction; it adopted an enabling approach by abolishing central administrative distribution of housing, taking measures to empower local authorities, organizing a housing market and relying on private initiative (PR, 44). The Housing Act does not allow evictions if households are not able to pay rent and utilities as result of social constraints (i.e., unemployment, ill health, disability, etc.) in which case the local authority is obliged to assist with the payment of rent or the provision of adequate social housing (I, 82). In Slovenia the new Constitution (1991) declares (but doesn't guarantee) the right to adequate housing; it is primarily the responsibility of the individual with assistance from the national or local authorities (I, 97). The provision of housing construction land is directed by the new Construction Land Act (1997) (I, 10). The minimum technical requirements for construction are regulated by the Rules on the Minimum Technical Requirements for Construction of Residential Buildings and Flats (2000) (I, 9). Disaster prevention is regulated at the state level by the law and implemented by responsible state agencies, local authorities, specialized agencies or local community (civil) groups (I, 89). As far as the participation of the public and participation in the process of planning is concerned, they are assured by valid legislation and implemented in practice (I, 28).
Cooperation between local government, public institutions and different groups of people is slowly developing. After the adoption of Agenda 21, NGO activities in the field of environmental protection and spatial planning sharply increased. More than 80 groups of NGO existed in 1995. In 1995 under the leadership of Umanotera, Slovenia's foundation for sustainable development, the NGOs published Agenda 21 for Slovenia as the result of two national and four regional workshops. The document was prepared to encourage public debate and civil initiatives in the realization of the goals of sustainable development. In response to Chapter 7 and Chapter 28 of Agenda 21, the Local Agenda 21 project is being prepared.

Programmes and Projects: There are some sectoral policies (agricultural, traffic, housing, health, demographic development etc.), which have an important influence on urban development; in the area of settlement regulation these policies are far from being harmonized (O, 171). National settlement policy is defined in the old National Spatial Plan of Slovenia (1986-2000) and also in the Strategy for the Economic Development of Slovenia. Settlement policy for any particularly city or town is defined in long and medium-term communal plans and in more detailed urban and countryside plans; these local plans are still the old spatial plans. Slovenia has been preparing a new national spatial plan for some time. The Government's main objectives in its ongoing work in spatial planning are: harmonizing Slovenia's long-standing policy of polycentric development with the goals of sustainable development specified in Agenda 21 and the Habitat Agenda, and developing spatial planning mechanisms to proceed towards European integration that are compatible with EU spatial development guidelines. At the regional level, the objectives are: to promote an ecological, social and economic balance between cities and the countryside; and to coordinate the development of the regional settlements structure with the development of an integrated public transport system. At the local level, the objectives are: to promote the sustainable development of urban areas by improving land use and the existing built and natural environment through renewal and

modernization, preserving old city centres and their cultural heritage, confining suburbanization, re-using degraded and using vacant urban land; to introduce mixed land use, as opposed to the previous practice of city zoning, which had negative environmental, social and economic effects and caused many urban areas to lose their identity; to develop public transport and encourage cycling and walking; private car traffic should be limited and car parks set up outside the city centre; in the management of cities, to give priority to efficient use of water and of energy for heating, including the use of solar energy, and to the use of environmentally friendly building materials; to see the modernization of the existing housing stock as an important part in the investment structure for the housing sector to guarantee a suitable quality of the living environment in human settlements; to promote more comprehensive integration of housing policies with regional development and spatial planning policies (PR, 40-41). As an instrument for the implementation of settlement policy at the municipality level, municipality and city councils will prepare (new) municipality, city, and other spatial plans and urban maps within the framework of the (new) National Spatial Plan of Slovenia (H, 45).

The National Housing Programme (2000 - 2009) intends to improve the quality and sustainability of the living environment through rehabilitation and modernization programmes, based on a new ecological approach to technical standards, energy consumption, and building design (PR, 39). The main objectives of the housing policy, based on the implementation of the National Housing Programme are the following: to improve accessibility to all types of housing in various ways, depending on the financial abilities and demands of the population, mobility, and other circum-stances; to facilitate and enhance various ways of obtaining shelter and various forms/ways of housing ownership; to provide adequate assistance in the provision of housing to all those who cannot manage to do so on their own; to improve conditions for the provision of land for construction of multi-dwelling buildings, and managing them; to increase the volume of housing construction, including the renovation of the existing housing stock; to encourage a better quality of housing and living environment and to provide an adequate standard of living, including adequate size of housing units; to balance housing supply and demand, and to provide a sufficient quantity of units, intended for purchase or lease, in those regions where there is a lack of dwellings or demand for them; to encourage demographic development and facilitate the emergence of new households, by improving the entire housing supply; to contribute to the welfare of the family, the elderly and the disabled, as well as of other vulnerable population groups by adequate housing supply; and, to enhance the housing market and its beneficial developmental effects.

Municipalities have not managed yet to change the old spatial (planning and execution) documents with the adequate strategic and operational plans. In future on the basis of environmental vulnerability study, local authorities will determine the level of environmental protection that all regional development planning, sectoral natural resource management plans, and rehabilitation programmes must take into account (PR, 39). According to a survey conducted by a non-governmental organization SEG in 1999, there are several local municipalities in Slovenia with a completed and adopted local environmental protection programme. The majority of these plans include long-term and strategic components of environmental protection and, as a rule; they also include key partners at the local level (I, 23). Some municipalities have been implementing programmes for preserving old city centres and their cultural heritage. In the rural area programmes of comprehensive countryside development and village renovation are becoming more common (PR). With respect to especially vulnerable social groups (women, young people, Gypsies, old people, refugees, the handicapped, addicts etc.) the state is preparing a series of programmes and activities to improve their health, employment status, education, cultural activity, and living conditions (I, 15-16). Energy, agriculture, forestry and transport are the main sectors, which operate through public utility services. Public utilities are normally included in public environmental protection services at the local level (NEAP, 87). Thus, the local level is the place where programmes and measures of social security, active employment, environmental protection, and public utilities services are being executed.

Status: Today more than a half of the Slovene population lives in urban areas; however, if we include suburban areas, the share increases to 3/4 of the Slovene population (O, 163). During the transition period, concern about macro-economic performance as well as the shift away from some “social values” led to a stagnation in the quality of life and in the development of human settlements (O, 169). During the transition, many problems stemmed from land speculation, unauthorized construction, an underdeveloped real estate market and taxation system, and the lack

of investment. Despite the considerable volume of housing construction in past decades, there is some shortage of housing, particularly social housing and non-profit rental housing units. The shortage of housing has considerably influenced the construction of single-family houses in suburban and rural areas without sufficient communal infrastructure (PR, 41-42). Contrasts between urban and rural areas are disappearing; rural areas are the new urban periphery (O, 170). Maintenance of public utility systems is often neither regularly nor substantially provided. Reasons for this are: a public utility services price freeze in 1992, the badly thought-out reform of local government in this sector and the uncontrolled privatization of the most profitable former public utility companies (NEAP, 87). There is almost a 50% loss of water from water supply systems attributed to the network being out-dated. In addition, the treatment of wastewater generated by the population is insufficient. Air pollution from stationary sources has been significantly reduced in the last few years, but the pollution due to traffic has increased. Waste management and control is one of the issues that call for the most attention in the framework of Slovenian environmental protection. Separated municipal waste collection from households is organized only in some of the municipalities (I, 18-20). In the end we need to say, that with the ongoing reforms in the territorial administration of Slovenia, the capabilities of local authorities to deal effectively with local spatial planning, housing, environmental protection, transport and communal infrastructure have increased markedly (PR, 43). See also chapters 3, 4, and 5.

Capacity-Building, Education, Training and Awareness-Raising: Last years a comprehensive reform of public administration, in the framework of accession to EU, has been taking place (D, 279). From 1996 to 1999, a number of conferences, seminars, and training courses took place concerning town planning and development, and housing construction; they were all focused on guidelines for sustainable development (I, 36).

Information: Regarding the management and maintenance of spatial data, extensive tasks related to updating and modernizing the land register is being performed. A public tender is open for the digitalization of the land register and other real estate registers, co-financed by international institutions (I, 36). In Slovenia the availability of sustainable development data is poor; however, there are some data (which one should process and connect), which are being partly collected by the different institutions. See also Chapter 28 of this Profile

Research and Technologies: In the area of sustainable space and settlement management, there are faculties, public institutions and experts in public administration that are doing research.

Financing: In 1996, the area of housing was allocated $6.97 million of guaranteed funding from local municipality budgets, equaling 2.1% of the total guaranteed funding in communities. In 1997, these funds amounted to $8.6 million, or 2.4%, and in 1998 $9.01 million, equaling 2.3% of the total guaranteed funding in communities (I, 10). In the period of 1995-1997, Government allocated 0,4% of the GDP to communal infrastructure.

Cooperation: In the area of spatial and settlement management Slovenia has been actively cooperating with different international organizations and institutes from several countries (especially with neighbors). Slovenia prepared a national Report on Human Settlements and a Slovenian National Report on the Implementation of the Habitat Agenda, both as a contribution to the Second UN Conference on Human Settlement (HabitatII). See also Chapter 28 of this Profile.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: The Ministry of Environment and Spatial Planning (MESP) coordinates the Government's work on sustainable development and environmental protection, and is the focal point for contact with the UN Commission on Sustainable Development. In the Slovenian Council for Sustainable Development the following major groups are represented: NGOs (3 representatives of environmental organizations), the private sector (Chamber of Economy and Chamber of Small Business), trade unions, Universities and the Academy of Science. The Slovenian Council for Sustainable Development was established in 1997 as an advisory body to the Slovenian government. It is led by the Prime Minister, with relevant Ministers and representatives of other governmental bodies, the scientific community, universities, business and NGOs as members. The Council does have the potential to become a significant actor for assuring sustainable development in the country, even to take the leadership (which happened in some countries in recent years). However, so far it has only met three times and has been preoccupied with administrative rather than matters of substance. The Council's secretariat is hosted by MESP, however it lacks the operational capacity to play a meaningful role. According to the Environmental Protection Act the Environmental Protection Council was established in 1994 by the Parliament to oversee the state of environmental protection. The Council has 11 members appointed by Parliament from the ranks of environmental protection experts. Even if one of the tasks of the Council is (by adopting positions and suggestions) to deal with the strategy leading from national environmental protection policy, its coordination with international trends, and the harmonization of development interests of the Republic, the Council has so far not taken a pro-active role in standing up for the interests of the environment.

Public participation in decision-making is not formalized yet. Slovenia has signed the Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters and its ratification is expected in 2002. In practice major policy and legal documents have been developed with public participation (at least consultation on the drafts) within the Ministry of Environment and Spatial Planning. Other ministries do dot have such a tradition of cooperation with the public.

In line with the Declaration on Environment and Development, the basic principles of sustainable development were incorporated in the Environmental Protection Act, adopted in 1993. This is a framework law, where in the provisions on the purpose of the Act it is stated that its objectives are: to satisfy the environmental needs of present and future generations, the aim of environmental protection is the preservation, improvement, and development of the integrity, diversity, and quality of natural elements, natural ecosystems, natural resources, and the natural treasure they represent; and regulate the development, the exploitation and use of space, and other activities affecting the environment must represent a balance between developmental and environmental needs as a basic condition of healthy and enduring development (i.e., sustainable development). Specific tools in order to achieve integration of environment offered by the Act are: Environmental Impact Assessments (EIAs, Article 55 and implementing regulations) are required where a project is likely to have significant environmental impacts. The regulations are fully harmonized with the EU legislation; Environment Vulnerability Studies (EVS, Article 51) should be the base of all planning, programmes, and project activities, and for the provision of guidelines for development planning; and, Comprehensive Assessment of Environmental Impact (Article 54, equivalent to Strategic Impact Assessment studies, SIA) should be required before the Minister's consent can be given to any development planning acts of the Republic and local authorities. Unfortunately implementing regulations for the EVS and SIA are missing thus making the two provisions without any legislative power.

Programmes and Projects: The Republic of Slovenia has so far not adopted a national strategy for sustainable development as foreseen by Agenda 21 (8.7). There are three other national strategic policy documents that could be seen as partially covering the area: the National Environmental Action Programme (NEAP, adopted by the Parliament in 1999), the Strategy of Economic Development of Slovenia 2001-2006 (adopted by the Government in 2001), and the National Development Programme of Slovenia (presently in the process of adoption). The NEAP does not have the ambition to be a comprehensive development programme, but rather to focus on solving key environmental problems (the four priority areas being: improving the state of the aquatic environment, through

reducing pollution; coping with the problem of waste by reducing waste generation and setting up an effective waste management system; conservation of biological diversity; and protecting air quality and climate). A comprehensive report on the implementation of the NEAP is expected in 2002.
The Strategy of Economic Development of Slovenia, prepared by the Institute of Macroeconomic Analysis and Development, positions sustainable development as a key element of the New Development Paradigm, and among development factors describes three components of welfare: economic, social and environmental. The Strategy also calls for substantial administrative reform (the creation of an adaptable and professional administration), with a higher level of coordination in the formulation and implementation of development and economic policies. This is very much in line with the provisions in Agenda 21 (8.2) where an adjustment or even a fundamental reshaping of decision-making is called for. Furthermore the Strategy emphasizes the importance of a wide consensus - of a partnership between the state, civil society and the economy, where a mechanism should be established for NGOs and individuals to have a direct influence in decision-making. In its sectoral part the Strategy also outlines an agenda for a Green Budget Reform, as a tool for greening the economy and achieving higher employment through the double dividend. The weakness of the Strategy is its lack of implementing, operational acts and institutions. There is therefore a great danger that the Strategy will suffer from the same syndrome that it describes itself: the implementation deficit. The National Development Programme of Slovenia is being prepared largely as a framework programme for EU structural and cohesion funds. It does, however, implement the Strategy of Economic Development to some extent, although not in its comprehensive framework. Therefore the environment is treated mainly as an area of investment (where three priority areas are outlined: water supply and waste water; waste management and biodiversity). It should be noted that a pilot Strategic EIA was prepared for the Programme.

Status: *National Decision-Making Structure:*

1. National Sustainable Development Coordination Body	yes
2. National Sustainable Development Policy	no
3. National Agenda 21/other strategy for SD	no
4. Local/Regional Agenda(s) 21	in process
5. Environmental Impact Assessment Law	yes
6. Major Groups involved in Sustainable Development Decision-Making	yes

National Instruments and Programmes:

1. Sustainable. Dev. or environmental education incorporated into school curricula	yes
2. Sustainable Development Indicators Program:	in process
3. Ecolabel Regulations:	no
4. Recycle/Reuse Programs:	in process
5. Green Accounting Program:	no
6. Access to Internet:	yes
7. Access to World Wide Web:	yes
8. National World Wide Web Site for Sustainable Development or State of the Environment:	no

Policies, Programmes and Legislation:

1. Combating poverty:	yes
2. Changing consumption and production patterns:	no
3. Atmosphere:	yes
4. Land Use Planning:	yes
5. Forest and Deforestation:	yes
6. Desertification and Drought:	no
7. Sustainable Mountain Development:	yes
8. Sustainable Agriculture:	no
9. Biological Diversity:	yes
10. Biotechnology:	no
11. Oceans and Coastal Areas:	yes

12. Freshwater Management:	yes
13. Toxic Chemicals:	yes
14. Hazardous Wastes:	no
15. Solid Wastes:	yes
16. Radioactive Wastes:	no
17. Energy:	yes
18. Transport:	no
19. Sustainable Tourism:	no

Capacity-Building, Education, Training and Awareness-Raising: In terms of awareness-raising on the topic of integration of environment into other sectors, most of the work has been done by Umanotera, The Slovenian Foundation for Sustainable Development. In 1995 it prepared (in partnership with other NGOs) Agenda 21 for Slovenia - a Contribution as a framework strategy for sustainable development in Slovenia. In 1996 it initiated a programme promoting Local Agenda 21, supported by seminars, training courses and publications. Recently it published and disseminated two brochures: European Union, Slovenia and Sustainable Development, and How Serious is the European Union about Sustainable Development: Integration of Environment into Policies of other Sectors, and organized public discussions on the topics.

Information: See **Chapter 40** of this Profile.

Research and Technologies: See **Chapter 35** of this Profile.

Financing: See **Chapter 33** of this Profile.

Cooperation: See **Chapter 2** of this Profile.

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: In Slovenia, the Ministry of Environment and Physical Planning has air quality management tasks and is primarily responsible for making decisions regarding the protection of the atmosphere. Inspectorates are organized at state level and are responsible for the enforcement of the legislation. The Climate Change Committee established in 1997 is a governmental body responsible for issues related to climate change that includes all relevant ministries and NGOs. There are also some institutions active in the field of measuring air pollution in Slovenia: the Milan Vidmar Electroinstitute (http://www.envir.eimv.si/), the Celje Public Health Institute and the Environmental Protection Institute with the Maribor Public Health Institute. Other institutions such as universities, research institutes and consulting companies are consulted, depending on the subject. Representatives of local authorities as well as of farmers, workers' unions, business and industry ("social partners") are partly involved in the process of law-making. Decisions on licensing procedures, regional planning etc. are made at local level involving neighbors and people affected respectively. Air quality standards are generally oriented towards the protection of the most sensible groups of the population, e.g. children and the elderly.

For the purpose of preparing and implementing UNFCCC in Slovenia the National Climate Committee (NCC) was established in 1997 which includes representatives from the ministries, state institutions, industry, academy, NGOs, and Chamber of Commerce. NCC has advisory status. Climate change impacts could particularly hit inhabitants of the alpine and coastal regions and farmers; the main policy focus is to take early action against climate change.

Slovenia considers environmental protection an important and urgent task. The Environmental Protection Act adopted in June 1993, which includes air protection, lays down general principles, which are implemented by decrees, regulations and other legally binding secondary legislation. In November 1994, the government adopted a set of directives on air protection regarding emissions into air (Official Journal of the Republic of Slovenia No.73/94). Data on the concentration of compounds in the environment are processed according to the Directive on Limit, Alarm, and Critical Values of Compounds in Air. The Directive on the Tax for polluting air with emissions of CO2 (Official Journal of the Republic of Slovenia No.68/96, 2/97, 51/99) lays down the amount and the manner in which the consumers of fossil fuels have to pay this tax. This tax does not apply to coal consumption until 2004.

Slovenia ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1995 and signed the Kyoto protocol (ratification envisaged in 2002) with an 8% reduction target based on 1986 emissions. It has introduced, in 1996, and amended in 1997 and 1998, a CO2 tax and established in 1997 a Climate Change Committee that includes all relevant ministries.

A National Environmental Action Programme (NEAP) was adopted by the Government in 1998, setting objectives and priorities until 2003. According to the Environmental Protection Act, the NEAP is designed for a 10-year period and is harmonized with national programmes and plans concerning other fields. The NEAP consistently follows and adopts the aims of the Strategy for Economic Development of Slovenia. Those goals, which are not contrary to the NEAP, have been selected from the already adopted long-term sector goals. The Kyoto Protocol to the UN Framework Convention on Climate Change binds Slovenia to reduce its emissions of greenhouse gases by 8% with regard to the reference year 1986. The quantity of CO2 emissions, the major greenhouse gas, began to fall after 1986, mainly due to economic difficulties. Following the new impetus of economic growth and the revival of transport routes in 1992, the quantities of the emitted CO2 have increased rapidly. In 1997 the emissions exceeded the amounts of the reference year 1986. The electricity sector and traffic contribute the largest share of CO2 emissions (35% and 32% respectively). The greenhouse effect is also caused by methane (CH4) and nitrous oxide (N2O) emissions. The main sources of these are agriculture, waste management, the coal industry and traffic. The remaining greenhouse gases covered by the Kyoto Protocol are HFC, PFC and SF6. Their contribution to the greenhouse effect is smaller. The programme for reducing the emissions of greenhouse gases is currently being drafted. The first estimates show that the reduction in greenhouse gas emissions will be a difficult task for Slovenia. Nevertheless, it is a challenge and an additional incentive for the restructuring of the energy sector and industry in order to ensure greater economic efficiency in the future. The way people live will have to be altered and the connection between the improved standard of living and the increase in energy consumption will have to be broken.

If Slovenia wants to meet the requirements of the Kyoto Protocol, it will be of key importance to stabilize the emissions of greenhouse gases from traffic.

Programmes and Projects: See under **Decision-Making** and **Status**.

Status: Full membership to the EU is Slovenia's main short-term foreign policy goal. Such a position demands that Slovenia harmonizes atmosphere protection regulations and standards and plays an active role in the international community and in the global solving of the current and prevention of future environmental problems.
In recent years air pollution from stationary sources has substantially reduced, but pollution caused by traffic has increased. With the gradual revival of industry, the emissions from stationary sources will increase again, although it is estimated that the increase will be slower.
The basic orientation for the next decade is to formulate measures for the simultaneous control of stationary and mobile air pollution sources. The basic long-term tasks concerning air quality are to ensure effective protection of people against health risks due to air pollution and to reduce greenhouse gas emissions. The priority tasks concerning air quality for the period until 2008 are to: reduce air pollution from industrial sources; reduce emissions from thermal power plants; limit the air pollution caused by traffic; to reduce emissions from individual and district heating systems (boiler rooms) in urban areas; limit the causes of photo-chemical smog and tropospheric ozone; abolish the use of ozone-depleting substances (ODS); to reduce greenhouse gas emissions (Kyoto Protocol); and control long-range air pollution. Framework objectives by individual pollutants are: Preparation and implementation of measures for the reduction of greenhouse gas emissions in accordance with the obligations arising from the Kyoto Protocol - the greenhouse effect of emissions of CO2, CH4, N2O, HFC, PFC, SF6 should be reduced by 8% with respect to 1986; *ODS*: the enforcement of the adopted regulations. Prohibition of ODS emissions into the air and introduction of ODS recovery; *SO2*: the reduction of emissions to the level of permissible burden—the reduction of the emission level by 45, 60 and 70% by 2000, 2005 and 2010 respectively with regard to the reference year 1980 (the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions); *NOx*: attainment of the emission level of 40,000 tons/year in accordance with the Protocol concerning the Control of Emissions of Nitrogen Oxides by implementing the measures in thermal power and cogeneration plants and in traffic; *NH3*: objectives will be harmonized with international obligations; Implementation of measures for the reduction of emissions of volatile organic compounds (VOC); *Heavy metals*: the reduction of emissions of cadmium (Cd), mercury (Hg) and lead (Pb) in accordance with the provisions of the Protocol on Heavy Metals; *Dust*: the enforcement of adopted regulations; *Other contaminants*, e.g. persistent organic pollutants (POP): the current status will have to be analyzed. Practical objectives can only be determined for affected areas.
Convention on Climate Change: The Kyoto Protocol requires developed countries and countries in transition to reduce greenhouse gas emissions. Under this protocol, the obligation of Slovenia is to reduce greenhouse gas emissions (CO2, CH4, N2O, HFC, PFC and SF6) by 8% on average between 2008 and 2012 with regard to 1986 as the reference year. In 1986 CO2 emissions caused by fossil fuel consumption amounted to 15.1 million tons and have been decreasing until 1991 (12.7 million tons). Since then, CO2 emissions caused by fossil fuel consumption have been increasing, reaching 16 million tons in 1999. The EU objective is to stabilize CO2 emissions at the 1990 level by 2000 and to further reduce them after 2000. The projections indicate that without additional measures emissions caused by fossil fuel consumption will amount to between 15 and 19 million tons of CO2 in 2010, depending on the rate of economic growth. In order to meet the requirements of the Kyoto Protocol, a comprehensive programme for limiting greenhouse gas emissions will have to be drawn up and implemented simultaneously with the monitoring of the effects. The programme will have to be periodically updated. The possibilities to reduce other greenhouse gases will have to be fully exploited. In some sectors the possibilities for reduction are substantial, e.g. the waste management sector. Instruments (particularly economic) will be provided for the purpose of achieving the Kyoto objectives to minimize the costs of emission reductions (taking into account other relevant criteria). In accordance with this, the burden of emission reduction will be divided between sectors so as to equalize the limit costs of reduction in all key sectors. The Montreal Protocol (and its amendments) concerns the phasing out of ODS. In accordance with the assumed obligations, the following will have to be ensured: the

harmonization of the energy, industry, transport, agriculture, forestry and waste management strategies with the air protection strategy and with the programme for limiting greenhouse gas emissions; the full advantage to be taken of the synergistic effects of simultaneously addressing local air pollution problems and the problems concerning the reduction in greenhouse gas emissions; the integration of the provisions of adopted international protocols into Slovenian legislation; and, an active role for the Slovenian Committee for Climate Change Issues.

Air quality in Slovenia has improved in recent years. The most evident is the reduction of the pollution caused by SO2 emissions, especially in urban areas, partly due to the introduction of gas pipeline networks, district heating systems, etc. The state of air quality in the vicinity of power plants has improved (Šoštanj, Ljubljana). Between 1980 (used as a reference year) and 1995 total SO2 emissions in Slovenia decreased by more than 50% (from more than 250 000 to 120 000 tons a year). In accordance with assumed international obligations the SO2 emissions should have been reduced by 30% by the end of 1993. In very unfavorable weather conditions the concentrations of harmful substances still exceed the critical levels at a number of exposed locations within the areas of influence of thermal power plants, increasing the mortality rate of the exposed population.

The National Environmental Action Programme (NEAP) adopted by the Government in 1998 assures the fulfilment of the assumed international obligations such as The UN Convention on Long-Range Transboundary Air Pollution (UN/ECE CLRTAP), with several protocols (the second refers to the control of sulphur dioxide; new protocols are in preparation, e.g. for VOC, SO2, NOx, heavy metals, POP, etc.). In accordance with the second protocol on sulphur, Slovenia has assumed the obligation to reduce annual SO2 emissions to 93 000 tons in total by 2005, and to 70 000 tons by 2010. The 1996 emission was 110 000 tons; in 1997 the emission increased, totalling 120 391 tons. The EU directive plans a reduction of 35% from 1980 to 2000. Slovenia achieved that goal in 1996 (see Figure). Pollution of the air caused by nitrogen oxides (NOx), which mostly affect the immediate vicinity of roads and power facilities, is increasing. In 1990 and 1991 NOx emissions temporarily abated, owing to a decrease in traffic and industrial production. Since then they have been rapidly increasing. The total quantity of NOx emitted in 1997 was approx. 23% greater than in the reference year 1987. The Protocol concerning the Control of Emissions of NOx requires that Contracting Parties stabilize emissions of NOx at 1987 levels. The electricity sector generates the major share of SO2 emissions (81%) while 66% of NOx emissions are caused by traffic (CORINAIR methodology). The protocol on nitrogen oxides and related substances, which would limit the harmful effects of acidification, photochemical smog and eutrophication, is in preparation. It is expected that annual NOx emissions will have to be reduced by at least 30% with regard to 1987, which means a permissible annual emission of 40 000 tons (in 1997, 70 600 tons of NOx were emitted). The EU has stipulated a 30% reduction of emissions between 1990 and 2000. The protocols on heavy metals and persistent organic pollutants are in preparation. Motor traffic is also the main source of lead emissions and emissions of volatile organic compounds (VOC), which can form photochemical oxidants. Another source of VOC emissions is industry. The protocol on volatile organic compounds stipulates a 30% reduction by 1999 (EU by 2000) with respect to 1988. Slovenia has not yet signed the protocol, which would oblige it to limit VOC emissions to 24 500 tons (the emissions were last calculated for 1990 - 35 000 tons). During the summer months the concentrations of ground-level ozone at all permanent measuring stations almost daily exceed the limit values. High ozone concentrations have adverse effects on people and plants. In Slovenia much of the ozone is generated by transit traffic but with the current measuring network the extent of pollution can not be determined. Owing to the long-term pollution of air, and consequently of soil, with substances (SO2, NOx) which cause acid rain, the forests have deteriorated in the major part of Slovenia and the biodiversity has been threatened. In recent years the consumption of Ozone Depleting Substances has decreased substantially. The use of CFCs in production has been abandoned but the consumption of HCFCs has increased between 1989 and 1996, reaching 16% of the permissible level in 1996. The current network for automatic air pollution measurements has not been adjusted to the changes in the source of air pollution (motor transport) and neither to the new legal regulations.

Slovenia's long-term air protection strategy has not yet been developed. It will have to respond to the question of air quality (locally and generally) in relation to international quality standards (e.g. those imposed by WHO) and simultaneously provide for the development of services, industry and other sectors.

Major Challenges: Disregarding the considerable reduction in the emission of all pollutants and a reduction in the specific emission compared with the average emissions in the EU countries, Slovenia still has a problem of air

pollution. Excessive or moderate air pollution has been registered for a number of years in the urban (for example the capital city of Ljubljana) and rural locations (for example Šoštanj thermal power plant). The reason for this is in cities is a release of pollutants in the air from mobile sources, certain technological processes and burning of fuels. On the basis of emission measurements and monitoring in the settlements, it can be concluded that a considerable number of inhabitants is exposed to excessive or moderate air pollution. The air quality standard for NO2 is exceeded at locations influenced by road traffic, at several sites on a few days per year. Also air pollution by particulate matter is a problem mainly related to cities. Peak levels of ground level ozone can be measured especially in central Slovenia on several days during the summer season.
No major problems occurred with regard to eliminating the use of ozone depleting substances, but the situation is different for reducing greenhouse gas emissions in Slovenia. Rising demand for road transport inside Slovenia, international treaties as well as missing harmonization within the EU with respect to fiscal measures, an already high share of hydro power in electricity generation, legislative and administrative competences scattered between different ministries and different levels of administration all pose problems for the reduction of greenhouse gases.
Slovenia already has a high share of forested area with sustainable forest management (51% of total area). Increases in quality can still be expected, but the possibility for further improvement is limited. In addition to the direct reduction of CO2-emissions much importance is attached to renewable resources.

Capacity-Building, Education, Training and Awareness-Raising: Slovenia has a relatively long tradition in raising public awareness in relation to nature and the environment. Certain influential non-governmental organizations which have included these tasks in their programmes have played an important role: the Slovenian Meteorological Society, Slovenian Mountaineering Society, the Natural History Society of Slovenia, the Scout Association of Slovenia, the Association of Environmental Protection Societies, and a great many movements and societies from the 1980s onwards. Nevertheless, despite this wealth of activity, these players have never united to adopt a common approach to the raising of environmental public awareness.
Slovenia's education system is well organized and structured. It includes environmental education at nearly all levels. Unfortunately, meteorological education is still too limited. It should induce changes in behaviour patterns and include information, which is the basis for an active participation of the individual in the formulation of environmental policy. Not enough emphasis is placed on the critical approach to problems and the simultaneous search for solutions, and too much on the mere identification of problems and useless criticism. At higher education levels students of law, economy, administration and interdisciplinary environmental studies do not receive enough environmental education. This causes a problem in the educational process itself (lack of personnel), in the national administration, public companies (public utility services, etc.) and the economic sector. This is another reason why problems arise during the coordination of programmes, information and all activities relating to environmental education and training. After the modernization of the primary school system, environmental education, which today forms a part of the curriculum of various subjects, will become an optional subject. At all education levels and in companies and institutions, more attention will have to be devoted to the integral aspect of environmental education. The long-term goal is environmental education, which will enable students to acquire knowledge, skills and an environmental awareness throughout their education, from primary school to university. Public awareness of climate change and protection of the atmosphere is promoted through information in the media (television, radio, newspapers) and the information by Internet.
Priority areas for capacity building will be focused primarily on: development of education, training and public awareness raising exchange; preparing national communications and national action plans; promoting research and systematic observation of impact assessment and adaptation methods; improving the quality of the national greenhouse gas inventories, including establishing of national registry systems; and, facilitating the elaboration of national policies and measures to reduce emissions

Information: The monitoring on water management and air pollution is carried out by the Environmental Agency of the Republic of Slovenia (former Hydrometeorological Institute of the Republic of Slovenia), a body within the Ministry of the Environment and Spatial Planning itself (http://www.rzs-hm.si). Slovenia can provide accurate air quality indicators for the past few years on the basis of air quality monitoring network. The national air pollution

monitoring network comprises the Basic monitoring network, directed by the Environmental Agency of the Republic of Slovenia, as well as complementary networks with measurements performed by other organizations. The monitoring network is denser in areas with heavy pollution. Enclosed is the map of all measurement sites for air pollution showing the network for monitoring acid gases, 24-hour concentration of black smoke, the network of automatic environmental-protection-and-meteorological stations, as well as the network for monitoring precipitation quality and the amount of deposited matter. Annual reports on air pollutant emissions have been prepared in Slovenia since 1992. These reports include the following substances: S02, NOx, N2O, CH4, CO, C02, NH3, NMVOC and heavy metals (Pb, Cd and Hg).
Provisions on exchange of information, public information, and reporting, are in the Slovenian Environmental Protection Act. Public information on concentrations of air pollution in real time is currently made available to the general public via Internet and on tele-text (TV Slovenia, TTX page 146). The issues of climate change, emissions inventory results and other air pollutions issues can also be found on the web page of the Ministry of the Environment and Spatial Planning (http://nfp-si.eionet.eu.int/air). Data from automatic measurements of air pollution (ANAS Monitoring System) are available on the pages: http://www.envir.eimv.si/meritve.htm, http://www.rzs-hm.si/podatki/ekoloski_podatki.html, http://www.rzs-hm.si/podatki/onesnazenost_zraka.html, http://www.rzs-hm.si/podatki/koncentracije_ozona.html.
Warning measures and extraordinary measures when certain threshold values are exceeded are already foreseen. No problems are envisaged in complying with the provisions on information exchange as measurements are on-line and Slovenia already has good connections with the European Environment Agency. Information is disseminated and shared at the national and international levels through the reporting to the Convention on Long-range Transboundary Air Pollution and through the reporting to the European Commission.

Research and Technologies: Governmental activities in the field of energy, transport and industry concentrate on the development of safe technologies, development of new and renewable energy systems, public awareness-raising including product labelling. Fixed continuous measurement of CO, ozone, particulate matter, NO2 and SO2 respectively are performed at about 10 sites in Slovenia. Up-to-date information on air quality is made available to the public. Measurements of heavy metals and some persistent organic pollutants in soil have been carried out extensively throughout the last years; furthermore bio monitoring programs have been used for monitoring of deposition. Research on renewable energy sources (e.g. biomass) and on environmentally sound transport is supported. In future in Slovenia new technologies should be developed and introduced to reduce greenhouse gases emissions. Energy efficiency technologies are needed and are being developed to protect the atmosphere. Research in the field of Climate Change is conducted at Biotechnical faculty of Ljubljana University and other institutes and covers evaluation of long-term climate data series, climate change scenarios and impacts of climate change.

Financing: In 1996, Slovenia received US$ 6,2 million through multilateral channels. The Slovenian Government encourages industry to develop safe technologies by granting loans from the ECO Fund.
Two projects were under consideration: reduction of air pollution for Slovenia as a whole (Phare Subvention 400,000 ECU and Credit from the World Bank US$23,8 million) and the phase-out of CFCs and other ozone depleting substances (Global Environment Fund US$ 6,2 million). Both projects ended in 1998.
The estimated costs of the implementation of National Environmental Action Programme (NEAP) measures are SIT 263.51 billion. This estimate takes into account only measures planned in the NEAP for the next five years. The dynamics of cost distribution by years is linear; approximately SIT 52 billion (1.5% GDP) a year is envisaged for the implementation of the measures mentioned. It is expected that nearly 85% of the funds earmarked for the implementation of the measures will be needed in the fields of water protection and waste management; 11% in the field of air protection; almost 4% for the conservation of biodiversity; and less than 1% for other fields. The main source of the funds will be the public sector, which is expected to cover 77% of the total cost. The rest will be covered by the private sector.
Possible financial resources for the implementation of the NEAP programmes are: *long-term ecological reservations* - funds that companies have reserved in accordance with the Act on the Ownership Transformation of Companies for solving environmental problems; *loans from the Environmental Protection Development Fund* (non-

commercial loans according to the criteria of selected priorities in the NEAP, subsidizing of the interest rate, deferment of payment); *long-term resources or mechanisms*—loans from multilateral creditors (IBRD, EBRD, EIB) and bonds of local communities or the State; *non-reimbursable EU funds* for associate countries; *Phare*: 70% for investment projects, 30% for the strengthening of the institutional system; *EU Cohesion and EU Structural Funds*, which are only available to EU Member States; *state budget funds* —funds for the implementation of the tasks performed by spending units; funds intended for the construction of public utility infrastructure; and funds for the participation in projects co-financed by PHARE. (It is impossible to predict the share of funds in the national budget or the budgets of local communities for a period of ten years. On the basis of the current situation it is possible to estimate that the population will bear part of the costs of implementation of the NEAP through higher prices of public utility services. It should be emphasized that current prices of waste removal, collection and treatment of wastewater and drinking water supply are not sufficient for achieving the goals of the NEAP); *Direct foreign investments*—most frequently for the modernization of production and to create commercially interesting conditions for investors, who should invest in heavy industry, which is the most critical with regard to the environmental burden; *Loans from commercial banks* —management of the loan portfolio of the Environmental Protection Development Fund (assumption of credit risk), if this is in accordance with the policy of the fund; or opening of credit lines for loans from multilateral creditors; *Global Environment Facility (GEF)* —for the reduction of greenhouse gas emissions, the protection of biodiversity, reduction of ozone-depleting substances, the development and improved quality of transboundary water bodies; Non-reimbursable funds from donors include private capital, particularly in the public service sector. Subsidies are not recommended as a source.

In addition to the planned budget funds, other funds will be needed to achieve the goals of the NEAP. Sources of these funds will be mainly municipal budgets; loans from the Environmental Protection Development Fund and the private sector; and foreign financial resources (loans from international financial institutions and funds from foreign grant programmes). The review of the planned costs of the implementation of the National Environmental Action Programme (NEAP) in the field of air protection and possible financial resources are shown in the following Table.

Planned costs of the implementation of the NEAP in the field of air protection in the period 1999-2003 and possible financial resources in SIT million

YEAR COSTS FINANCIAL RESOURCES Public sector State budget (MESP only)* Foreign

YEAR	COSTS	FINANCIAL RESOURCES	
	Public sector	**State budget (MESP only)***	**Foreign funds**
1999	108	27.6	-
2000	90	41.5	1 000
2001	90	56.5	1 000
2002	90	70.3	1 000
2003	90	90	1 000
Total	**468**	**285.9**	**4 000**

(*In addition, the funds of other spending units (Ministry of Economic Affairs) are needed to realize the goals.)

Note: The estimated private sector costs in the field of air protection amount to SIT 29.4 billion

In future Slovenia will implement the Polluter Pays Principle, where a polluter covers the total costs arising from environmental burden, in accordance with regulations. The costs must not be underestimated so as to generate a profit for the polluter at the expense of the community or the environment. In order to promote the reduction of environmental burden and with a view to ensuring the use of less harmful alternatives, an ecological tax may be prescribed with regard to the content of environmentally harmful component in a raw material, energy feedstock or product; with regard to the harmfulness of their use or the harmfulness of operation, equipment or service; or with respect to the waste generated.

Cooperation: In order to phase-out chlorofluorocarbons (CFCs) and other ozone depleting substances, Slovenia has ratified the Vienna Convention. The Republic of Slovenia is a party of Montreal Protocol on Substances that Deplete the Ozone Layer since the year 1992 and has ratified it and signed all the Amendments which include: London Copenhagen Amendment. Slovenia also ratified the United Nations Framework Convention on Climate

Change (UNFCCC) in 1995 and regularly submits its report to the UNFCCC Secretariat. Slovenia also adhered to the Kyoto protocol with an 8% reduction target based on 1986 emissions and is now prepared for starting the ratification of the Kyoto protocol after the COP-7 together with the EU. Slovenia supports international action to reduce transboundary air pollution and Slovenia agreed in 1992 to the European Union Convention on Long-Range Transboundary Air Pollution (CLRTAP) and it fulfills its obligations resulting from that Convention.

Two Slovenian regional monitoring stations, Krvavec and Iskrba near Kocevska reka, contribute data to the GAW monitoring network. Since their inclusion into the GAW programme in February 1994 the following activities are being performed: measurements of surface ozone, precipitation quality, reactive gases and aerosols, introduction of methods to ensure the quality of measurements; collaboration in routine annual interlaboratory comparisons for measuring the precipitation quality, maintaining the traceability of the Slovenian reference standard for measurements of ground- level ozone to the primary standard, active participation in WMO workshops and the GAW programme expert meetings; preparations for expanding the monitoring programme to other components (meteorological parameters, CO, aerosols, UV etc.). The GAW programme has been financed since 1994 by the state budget while joint research with NOAA is financed by the joint Slovenian-American fund within the framework of the Ministry of Science and Technology. Since 1995 a five-year Slovenian-American project between HMZ and NOAA-Air Resources Laboratory on dry and wet deposition is up and running. See also under **Finance.**

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

Decision-Making: The body primarily responsible for integrated spatial planning and land management is the Ministry of Environment and Spatial Planning. At the local level the municipalities and urban municipalities have the authority in taking land management decisions on local matters of public interest. Sectoral coordination of planning and management of land resources is performed at both national and local levels. The Ministry of Agriculture, Forestry and Food is responsible only in cases specially regulated by the law, where changes of the usage for other purposes of land earmarked for agriculture has to be decided upon. Public participation in the planning process is much more developed in Slovenia than in other countries in transition. The non-governmental organizations have a strong influence in the public participation process. About 50-60 NGOs in Slovenia are primarily devoted to environmental issues, operating at a national or local level.
An important instrument of coordination is the National Spatial Plan of Slovenia. At the local level the State supervision of Municipal Spatial Plans is an opportunity of assuring coordination on the sustainable use of natural resources. Planning in accordance with the Law on Spatial Planning is intended to promote coordination of national and local activities, and provide a basis for decisions concerning use and conservation of resources. The most relevant national legislation consists of: legislation on integrated spatial planning, environment protection, water management, nature protection, cultural heritage, forest management and agriculture. The Government intends to: develop strategic elements of spatial development; promote harmonized regional development; prepare legislation on instruments for coordinating national and regional objectives within the framework of European integration. The spatial planning system has been defined in three laws: The Law on Spatial Planning, the Law on Management of Settlements and Other Spatial Interventions, and the Law on Construction. The Environmental Protection Act adopted in 1993 defined three main environmental protection instruments to be used in spatial planning: environmental vulnerability studies, comprehensive environmental impact assessment, and environmental impact assessments. The comprehensive set of national policy objectives in spatial development will be defined in the Spatial Development Policy. Among the new objectives are: concentration of population and infrastructure facilities in regional and local centres (in order to avoid further extensive sub-urbanization); and revival of regionalism and orientation towards self-supporting regional development.
The Law on Agricultural Land (1996) regulates the usage of land suitable for agriculture and its protection; trade in agricultural land; agricultural land operations; and management of common pastures. The change of the status of agricultural land to allow its non-agricultural use is possible only as defined in the state planning acts and the planning acts of local communities according to the provisions of the law. The law also provides the protection of agricultural land from pollution, degradation by erosion and bad agricultural practices. In Article 9 there is a provision stating that the obligatory financial compensations for a change in the status of agricultural land may also be used, among others, for: the support of sustainable agriculture; purchase by the Fund of Agricultural Land and Forests of the Republic of Slovenia; measures for maintenance of farms in less favoured areas; and, programmes for restoration of polluted or degraded agricultural land. The Law on the Fund of Agricultural Land and Forests of the Republic of Slovenia establishes the Fund, which has the task to manage state-owned agricultural land, farms and forests, in accordance with development policy of Slovenia. The Fund is responsible for a sound management and environmental value of agricultural land, farms and forests, for their purchase and lease as well as for issuing concessions and the management of accumulated funds, etc. Another relevant piece of legislation is the Law on Restoration of Agrarian Communities and Return of their Property and Rights (1994). Agrarian communities can also be sub-communities, villages, neighbourhoods, corporations etc., their properties can be the right of pasture, collecting litter, watering of animals and similar usage. Sustainable management is not specifically mentioned in the Law.

Programmes and Projects: In 1995, the first Slovenian regional development agency was established by the Ministry of Economic Affairs, in one of the old mining regions. The purpose of this private institution was: to develop regional economic activity; to create and support jobs; to support the regional restructuring of heavy

industry; and to provide training and advisory services. In rural areas, there are programmes of countryside development and village renovation, carried out by the Centre for Countryside Development and Village Renovation within the Ministry of agriculture, forestry and food, since 1991. The programmes are based on the concept that the countryside and villages are uniform areas where the population, through different activities, maintains and cultivates the characteristics of individual landscapes and traditions.
The biggest changes in the use of land in Slovenia have been caused by the national programme of highway construction. A considerable amount of top quality agricultural land has been lost through this programme.

Status: With the independence of the Slovenian state and the introduction of a new political and socio-economic system in 1991, it has been recognized that the basic regulations on spatial planning adopted in 1984 should be modified to meet new realities, and should be harmonized with European Union regulations and standards. After 1991, the concerns about macro-economic performance as well as the shift away from some social values led to stagnation in the quality of life and the development of human settlements. The growing social polarization and income differentiation are the major driving forces behind the process of unregulated spatial restructuring, which could result in social segregation, unbalanced regional development and deterioration of many urban and rural areas. During the transition, many problems surfaced, such as: land speculation, unauthorized construction, underdevelopment of the real estate market and taxation system, and a lack of investment. It is expected that in Slovenia, problems will grow considerably in old industrial and mining areas, which often are characterized as depressed regions with contaminated land. In the future, these areas could create greater and more specific problems than the underdeveloped and demographic problem areas in general.

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

Information: During the last few years the Land Cover GIS inventories were used in Slovenia, derived from the satellite-scanned data (Source: Land cover GIS, Statistical Office of the Republic of Slovenia, 1997, and CORINE Land Cover Slovenia, PHARE Programme, 1998). The establishment of sectoral inventories and information system, according to the sectoral laws and regulations is currently being undertaken. The exchange of information during the planning process becomes a very important part of the planning process via Internet. Establishment of the land information system including modernization of the land cadastre, registration of buildings and land registration is an urgent activity being implemented and expected to continue for the next few years. The activity in establishing the indicators on environment and development for Slovenia, and the redefinition of existing spatial indicators are also being implemented. The promotion of the Spatial Plan of Slovenia can be accessed via the Internet on the home page of the National Spatial Planning Office. Also, promotion of the land-use plans at the local level is becoming very important, by providing information on existing plans and evaluation of future changes of land-use.

Research and Technologies: No information available.

Financing: In the budget of the Ministry of Agriculture, Forestry and Food for 2001, there are finances earmarked for different agricultural land use operations, such as the merger of small agricultural plots, denationalization and management of pastures.

Cooperation: No information available.

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CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: Forest management activities, consisting of silviculture and exploitations of forests, protection of forests, and building and maintaining forest infrastructure, are coordinated by the Ministry of Agriculture, Forestry and Food and the Slovenian Forest Service as the main decision-making bodies. Other ministries are also involved in decision making processes about the most important issues related to the forests, e.g. forest management plans.

A new Forest Act was adopted in 1993. It regulates the protection, cultivation, exploitation and use of the forests with the aim of ensuring their close-to-nature and multifunctional management. In addition to the long tradition of sustainable forest management in Slovenia, the documents signed at the UNCED in 1992 have had a considerable impact on the forest legislation. The most important characteristics of the Slovenian forest policy, based on the Forest Act, are: The general forest management goal is to achieve and sustain a forest management practice where forests are permanently structured in such a way that all forest functions are optimally balanced; The general forest management approach to achieve the goal is close-to-nature forest management that is based on indigenous populations of tree species and their natural regeneration and on small-scale interventions; Forest management plans are made for all forests at regional and local levels —the plans include the assessment of forest functions as well as goals, objectives and guidelines adapted to specific sites, status of the forest and forest functions. Participation of all interested parties is ensured (e.g. forest owners, nature conservationists, hunters, and representatives of local communities); Trees for felling are selected individually or in groups by qualified personnel; Permanent education and training is conducted among the foresters, forest owners and forest workers; and, Incentives and/or subsidies for the forest owners are provided to motivate the owners to manage their forests in accordance with the goals set. Implementation of the forest policy is assured by Slovenia Forest Service (SFS) established in 1994, whose main tasks are: preparing forest management plans; assisting the owners when selecting trees for felling; preparing programmes for incentives; providing programmes and conducting education and training; and monitoring the state of the forest and forestry activities.

Customary and traditional rights, including the right to land, local communities and forest owners are generally respected in Slovenia since the new Constitution of 1991. Although the Restitution Act was adopted as long ago as 1991, not all of the former owners have been had their land returned yet. Problems have been encountered between the traditional right of mountain pasturing and conservation of forests as well.

Programmes and Projects: The Forest Development Programme of Slovenia (FDPS: national forest programme) was adopted by the Parliament according to the Forest Act in 1996. The FDPS is part of the national strategy of sustainable forest management. The Programme acknowledges the Helsinki Resolutions, signed at the Ministerial Conference on the Protection of Forests in Europe in 1993, as one of the most important international commitments and identifies sustainable forest management as the primary goal, including the maintenance of biological diversity and all ecological, social, and production functions. The guidelines of the Programme have to be incorporated into the forest management plans, which are being made for all forests, irrespective of ownership. The Programme ensures sustainable management and protection of Slovenia's forests by a system of forest management plans and permits.

Slovenia has not participated in the Intergovernmental Panel on Forests (IPF) process. However, it has signed all resolutions at the Ministerial Conferences on the Protection of Forests in Europe and has participated in the process of implementing the resolutions (follow-up process). The government has also carefully assessed the relevance of the IPF proposals for action in Slovenia. Major points and concrete steps in implementing the IPF proposals for action in Slovenia are as follows: the existing national forest programme called the Forest Development Programme of Slovenia (FDPS) has been compared with the IPF proposals for action, and it has been found that the FDPS is fairly in line with IPF proposals; a methodology for the assessment of the multiple benefits of forests has been elaborated and is already being implemented. An evaluation of the forest functions is planned to be concluded by 2000 for the whole country; and; the involvement of all interested parties in forestry research has been strengthened in recent years.

Various major groups are involved in the management of Slovenian forests. They are included mostly during the preparation and adaptation of forest plans (forest management plan, wildlife management plan, and silvicultural plan). The forest management plan respects the proposals and guidelines of public institutions for maintaining the natural and cultural heritage in the forest land, watershed management, and competent bodies and organizations including local communities. The wildlife management plan respects biological indicators provided by research institutions. Hunters, farmers, natural conservationists and other whose activity in connected with wildlife are also involved in the creation of wildlife management plans. The silvicultural plan involves mostly owners of the forest. It tries to make an optimal balance between their management goals and the guidelines provided by forest management and wildlife plans. See also under **Decision-Making** and **Status**.

Status: Slovenia is one of the most densely forested countries in Europe. The forest covers 1.1 million hectares or 55% of the territory of Slovenia, and dominates as much as three-quarters of the landscape. Forest communities of indigenous tree species are well preserved. As much as 70% of the forest is private and 30% state owned. The current volume of the growing stock, 211 cubic meters per hectare, is not low in comparison to many other European countries. However, it is the long-term goal of the Forest Development Programme of Slovenia that the volume should reach at least 300 cubic meters and that the proportion of large-diameter trees should increase. Accumulation of the growing stock will improve the general protection functions of forests and their resilience to disturbances. Together with restrictions of litter gathering, this will also have an impact on carbon storage.
Since all forests in Slovenia are managed according to management plans and guidelines, the appropriate balance between growth and removals is ensured. For the decade 1991-2000, only 57% of growth of cut has been planned. Disturbances that diminish forest ecosystem health and vitality are a serious problem. Twenty to thirty percent of the timber loss in Slovenia is caused by air pollution or biotic and abiotic agents. In order to improve the quality of forests, silvicultural activities are subsidized by the state within the context of SFS planning. Among the non-wood forest products, mushrooms and game are most important. A decree that limits mushroom picking has been adopted, and hunting is also strictly controlled.
It is most important that close-to-nature forestry is promoted to ensure the overall biological diversity of forests. This is based on natural regeneration and moderate, small scale, interventions. A network of strictly protected forest reserves, many of them remaining untouched for more than one hundred years, has been established. These existing protected forests will be reconsidered in accordance with the new methodology for evaluating forest functions. Subsequently, a law on the protection of forests will be issued. In addition to the protection of threatened species, so-called eco-cells within the forest are being established. These represent small and unique habitats, preserved and managed for the enhancement of biological diversity.

Capacity-Building, Education, Training and Awareness-Raising: Clearly, the endeavour towards the protection of forests is not only oriented towards forests, but also towards people. In this context, the SFS, Forestry Institute of Slovenia and the Forestry department of the Biotechnical Faculty (University of Ljubljana) organizes workshops for forest labourers, farmer-foresters and other forest owners. Permanent education is provided for the employees in SFS. Considerable attention is paid to the education of schoolchildren, public organizations, and other groups about the structure and functioning of forest ecosystems. In addition, forest nature trails are used to inform the general public about forests and forest management principles.

Information: Criteria and indicators (C&I) are used as a reminder and a reference for policy development, although it has been found that nearly all indicators have already been covered within the existing legal/regulatory and institutional framework and in the FDPS. Descriptive indicators that have not yet been really thought of among decision makers are an especially valuable tool for appropriate stakeholders to remind the Government of the issues that still have to be resolved in terms of sustainable forest management. Criteria and indicators are also of great help in the sense of sustaining the existing policy if it is already in line with the C&I. For reporting of the development of the forest sector in Slovenia, the degree of implementation of the regional forest management plans is used, more frequently than the C&I, where all activities needed for the balanced development of all forest functions are laid down.

TBFRA 2000, which includes most of the C&I, contains a lot of information for assessing sustainable forest management at the international level. One of the indicators which is used in Slovenia is the degree of authenticity that indicates how close is the structure and composition of actual forests in relation to potential natural forests. In this sense we think that at the international level the terms 'natural forests' and 'semi-natural forests' could be more clearly defined and further elaborated. Another international indicator could also be the existence of suitable maps of the evaluated forest functions, which are one of the basic tools for setting relevant site-specific objectives for sustainable forest management. Although in Slovenia clear-cutting as a method of forest management is not allowed and therefore no indicators exist, some measures for assessing the range of clear-cuts may be very indicative at the international level.
Forest management plans that are made for all forests are public documents and are available to all potential users at the local departments of the Forest Service as well as at the Ministry of Agriculture, Forestry and Food.

Research and Technologies: Research activities in forestry and wildlife are performed by research organizations where the Slovenian Forestry Institute and Forestry department of the Biotechnical Faculty are the most active. Applied and pure research activities are in accordance with the national research programme and target research programme entitled GOZD (forest). Research activities are mostly financed by the Ministry of Agriculture, Forestry and Food and the Ministry for Education, Science and Sport. The main forest research programme GOZD includes the following research topics: *Silviculture studies*—site productivity, growth potential of stands, close to nature forest management indicators, response capacity to silvicultural measures; *Nature of the forest*—eco-physiological characteristics of forest reserves, dendroecological and dendrochronological studies, integrated protection of forest ecosystem, forest biodiversity; *Forest as the subject of protection and management*—integrated information and monitoring system, development of methods and techniques for forestry planning which should address sustainability and close to nature properties, forest as an energy source; and, *Forest as part of our living environment*—landscape-ecological properties of forested landscape, role of the forest in revitalization of the cultural landscape, history of forests and forestry.

Financing: The state finances primary measures for preventing or mitigating the disturbances in the functioning of the forest and forest work in protected forests and torrent watersheds. It subsidizes measures, which are the most important for fulfilment of the forest management plans. Types of subsidized measures and the percentage of subsidy are listed below:

- forest regeneration: artificial regeneration - total costs of saplings is paid; natural regeneration- 30% of the cost is paid
- forest protections: fire (up to 70%), game (material cost and 30% of other costs), diseases (30%)
- maintenance of wildlife habitats: 30% to 70%
- maintenance of forest roads: 35%
- afforestation after fires, and restoration of damaged forests: saplings plus 20% of the cost

For the implementation of forest measures outlined by forest management plans and the Forest Development Programme 0,87% of the budget or 0,204% of GDP is required annually. The budget for year 2000 is divided: forestry total: 20,000 US$: developmental research: 480,000 US$; Forestry service: 15,000,000 US$, general: 169,174 US$, subventions: 2,880,000 US$(regeneration of the forests: 676,000 US$, tending of the forests: 955,000 US$, forest protection: 1,024,000 US$, other: 224,481 US$), investments: 1,476,000 US$.

Cooperation: Very strong cooperation exists among government bodies, the Forestry Department of the Biotechnical Faculty, the Forestry Institute of Slovenia and the Slovenian Forestry Service at the national level. Slovenia is very active also on the international level where it participates in the following international activities: implementation of signed conventions and resolutions directly related with the forests: the Alpine convention, the Strasburg and Helsinki Resolutions on the protection of Forests in Europe, The convention on Biological diversity, The Bern Convention; cooperation with government and non government organizations—UN-ECE/FAO, EFI, IUFRO, PROSILVA; cooperation in the projects of the European Unions—PHARE projects MERA, CORINE,

FIRS, COST, projects for monitoring the damage to forests within the European network, projects of the 5-th framework of EU.

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: The Ministry of Environment and Spatial Planning is the main coordinating body for activities related with the problems of drought, although desertification is not an issue of major concern for Slovenia. Other ministries, e.g. the Ministry of Agriculture and Forestry, are also involved in the decision making processes about the most important issues related to drought. The Ministry of Environment and Spatial Planning and the Ministry of Agriculture and Forestry are the major groups involved in decision making. Municipalities and local communities are also involved in that process.
A new law has been submitted to the process of ratification in the Slovenian Parliament. The old one was rescinded in 1994. Until then the intervention laws are adopted for each year. The ratification of the new law has been temporarily stopped because it must be modified in accordance with European legislation.
The Slovenian Parliament is responsible for adopting the legislation and regulations about combating drought at a national level. In June, 2001 Slovenia signed the Convention to Combat Desertification, which serves as a very important document, which must be respected in further activities, related with legislation and regulations on drought and desertification problems.

Programmes and Projects: Problems related to drought are rising. Therefore various programmes and projects are still in an early phase, despite that some of them are already active. Thus, the Biotechnology faculty, University of Ljubljana and The Agricultural Institute of Slovenia are working on irrigation projects and they also study different development scenarios with drought tolerant crops.

Status: Desertification is not a major concern for Slovenia but problems related to drought are rising particularly in agriculture. Most of the activities are focused in repairing and compensating for damage caused by drought and a little attention is made for prevention actions.

Capacity-Building, Education, Training and Awareness-Raising: Farmers Advisory Service which belongs to the Chamber of Agriculture and Forestry of Slovenia informs and helps farmers how to protect their management activities from risks associated with drought. It helps farmers also with the applications for compensation for damage. The Environmental Agency of the Republic of Slovenia (HMZ) informs the public during the driest months about measures for conserving water. There are some awareness-rising activities for saving water in households and industry.

Information: Information about drought and its effects on society and environment may be found at the Ministry of Environment and Spatial planning, Ministry of Agriculture and Forestry, and the Environmental Agency of the Republic of Slovenia which releases yearly reports about drought in Slovenia.

Research and Technologies: See under **Programmes and Projects**.

Financing: Damage caused by drought is paid from national and municipality budgets. The total amount of money and percentage of compensated damage are regulated by the intervention law. The last intervention law has proposed 8 billions SIT for covering the damages made by drought in the year 2000. The State paid up to 20% of the officially confirmed damages.

Cooperation: The activities of the international community relating to this problem are being followed by the authorities and the professional public of Slovenia.

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CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: Decision-making activities concerning sustainable mountain development are coordinated by the Ministry of the Environment and Spatial Planning. Other ministries are also involved in decision making processes concerning the most important issues of sustainable mountain development. Work on a particular protocol before it is signed and on its subsequent implementation involves various ministries and institutions, which form a network responsible for fulfilment of the Alpine Convention goals. The National Coordination Body was established and it consists of: the Ministry of the Environment and Spatial Planning; Ministry of Economy; Ministry of Agriculture and Forestry; Ministry of Culture; Ministry of Education, Science and Sport; Ministry of Transport; Ministry of Foreign Affairs; Institute of Macroeconomic analysis and Development; Statistical Office of the Republic of Slovenia; Environmental Agency of the Republic of Slovenia; National Office for Spatial Planning of the Republic of Slovenia; Nature Protection Authority of the Republic of Slovenia, Surveying and Mapping Authority of the Republic of Slovenia, Geoinformation centre, National coordination body for implementation of the Alpine convention. The Slovenian Parliament is responsible for adopting the legislation and regulations concerning sustainable development in mountain regions at a national level. In 1995, Slovenia signed the Convention on the Protection of the Alps (Alpine convention), which serves as the main convention for protection the alpine environment, and the sustainable development of human activities in Slovenian mountains. The Alpine convention is implemented through signed protocols for the following working areas: population and culture, physic planning, preservation of fresh air, soil conservation, water management, nature conservation and landscape planning, mountain farming, mountain forest, tourism and free-time activities, traffic, energy, and waste management. Signed protocols should serve as guidelines and frameworks for strategies, policies and plans actions at national and local level.

Programmes and Projects: The goal of the Alpine Convention is a comprehensive policy on the protection and sustainable development of the Alps. The nature and landscape of the alpine region - one of the largest European ecosystems - must be protected, and at the same time the economic and social needs of the native population should be taken into account. The Convention serves as a platform for a transnational policy covering joint ecological and economic problems. It is also an effective instrument for the further development of an active policy on the Slovenian mountain region.

Status: In 1995, Slovenia signed the Convention on the Protection of the Alps (Alpine Convention). Under the Convention, Slovenia signed nine protocols to support sustainable mountain development in the following areas: Spatial Planning and Sustainable Development; Nature Protection and the Conservation of Landscape; Mountain Farming; Mountain Forests; Soil Conservation; Tourism and Free-Time Activities; Traffic; Energy; Protocol on problems solving. The activities managed in three working areas: Goals for Environment Quality, Avalanches and Landslides, and Implementation Mechanisms. In spite of nine signed protocols, none of them have been adopted in parliament. The total Slovenian territory covered by the Convention of the Alps amounts to 6.767 km2. Slovenia was the Chairing State for 1994 to 1998.

Capacity-Building, Education, Training and Awareness-Raising: Capacity-building, Education, Training and Awareness-raising is implemented through: the Ministry of Environment and Physical Planning and CIPRA Slovenia, whereby the public is informed about all activities concerning the Alpine convention; the ministries which are involved in decision making processes respect the Protocols of the Alpine Convention in new legislation and regulations; and local communities try to implement acts of Alpine Convention at the local level. Local communities of Kranjska gora, Bohinj and Bovec are such an example.

Information: Within the Alpine convention the Alpine Observation and Information System has been established (SOIA). The current working programme of SOIA includes: development of environmental and socio-economic

indicators; setting up a catalogue of data sources; setting up an Alpine research information system; and setting up a data-telecommunication network.
Further information on the Convention as such (including the text) can be found on the homepage of the "System for the Observation of and Information on the Alps" (SOIA) (http://www.abis.int) established by the signatories, and on the relevant pages of the International Commission for the Protection of the Alps (CIPRA) (http://www.cipra.org).

Research and Technologies: See under **Information**.

Financing: Financing of sustainable mountain development is performed with: international funds from international projects (the Alpine convention is an international project as well as CIPRA which is very active in all Convention activities); national budget (working on protocols and their implementation in Slovenian legislation is carries out by different participating ministries); and, municipality money (local communities give money for some activities for implementation of the Alpine convention in their local community).
Up to 3 persons within the Ministry of the Environment and Spatial Planning work permanently on the Alpine Convention. Employees from other Ministries contribute to specific working subjects or sectors. They are paid from the budget.

Cooperation: The Alpine convention represents a binding intergovernmental agreement for the protection and sustainable development of the Alpine massif. Several participating observers (NGOs, trans-national or regional associations, etc.) support the international cooperation under the Convention.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The primarily responsible body is the Ministry of Agriculture, Forestry and Food (MAFF). Some responsibilities related to prevention of pollution lie within the Ministry of the Environment and Spatial Planning. In the field of food/nutrition, the Ministry of Health has recently started to play a more important role. The level of cooperation of MAFF with other ministries in relevant fields shows a capacity for improvement. Formal procedures for the involvement of farmers in the decision-making process have improved with the establishment of the Chamber of Agriculture and Forestry in 2000, of which membership for all farmers is obligatory. Other major groups with better access to the decision-making process are women and youth, both being restricted to organized rural and farming population. In general, access to the process could be improved by better availability of information and by programmes for capacity building of relevant NGOs.

The most important piece of legislation is the Law on Agriculture, which is laying down the aims of agricultural policy, planning of agricultural and rural development and other general issues. It stresses the multiple role of agriculture in Slovenia (economic, spatial, ecological and social), mentioning among others the implementation of the principles of environment and nature protection. It gives provisions for direct payments for "nature-friendly farming methods" as well as for preservation of autochthonous plant species and animal breeds. Articles 40-41 give provisions for the regulation of integrated and organic food and farming. Following this provision, in April 2001 detailed Rules for organic production and processing have been issued (a Ministerial Decree).

In 2001, Law on Phytopharmaceuticals has been adopted, regulating the trade and control of active substances used in plant protection, as well as their registration and usage. Production, packaging and labelling of phytopharmaceuticals is regulated by the regulations on chemical substances, while waste residuals, waste packaging material and missions of phytopharmaceuticals are covered by the regulations on environment protection. The Law on Plant Protection (adopted 2001) is regulating protection of plants from diseases and pests, incl. biotic plant protection.

In 2000, Guidelines have been issued for good agricultural practice in fertilizing, and for good agricultural practice in plant protection.

The Ministry of the Environment and Spatial Planning introduced a Decree on the application of dangerous substances and fertilizers to soil, which was adopted in November 1996 so as to regulate the impact of fertilizers (both mineral and organic manure or slurry) and heavy metals on soil. The decree defines the limit for amounts of heavy metals, which may be added annually to soils, and the limit for amounts of plant nutrients, which may be added annually to soils with manure or slurry. In areas with shallow ground water used for water supply, the decree tries to narrow the imbalance between fertilizers input and crop uptake with the following measures: limited input of nutrients (fertilizers) with respect to crop uptake; application of fertilizers at the proper time; and sowing winter crops to minimize leaching losses, etc. The decree also controls the use of sewage sludge in agriculture, and sets limits for concentrations of heavy metals in sludge. The use of sewage sludge is controlled by permits given by the Ministry of Environment. Recently, new legislation has been adopted in Slovenia with the purpose of setting up a maximum limit and a critical warning system for dangerous substances in soil. This would be particularly important in soils used to produce foodstuffs. In this decree the soil is defined as a surface part of the lithosphere, which consists of mineral and organic substances, water, air and organisms. Concentrations of seven classes of pollutants have been determined which include: heavy metals; inorganic pollutants; aromatic compounds; polycyclic hydrocarbons; chlorinated organic; pesticides; and others.

Programmes and Projects: The Programme of Agricultural Policy Reform (1999-2002) adopted in 1999 includes an important element of sustainable agriculture and rural development, in line with the Common Agricultural Policy of the European Union. A second pillar of the reform called Direct Payments has a 4-level approach: EKO0 comprises compensatory payments and has no special relationship to environmental issues, EKO1 is giving support for agriculture in less favoured areas, EKO2 supports maintenance and preservation of the cultural landscape, while EKO3 is devoted to the support of environment friendly farming. The fourth pillar is Rural Development, which does not specifically refer to sustainability but more to the improvement of the economic situation in rural areas.

Further, the MAFF strategy of Slovenian agriculture in the light of EU-enlargement is the production of quality food.
The Slovenian Agri-Environmental Programme (SKOP) was introduced in 2001 as a pilot programme, with the aim to promote and offer financial support for 22 different agricultural measures in 4 groups: diminishing negative environmental impacts of agriculture; maintenance of natural wealth, biodiversity, soil fertility and traditional cultural landscapes; protection of protected areas; and, education, training and promotion. SKOP is based on voluntary participation by the farmers. Starting in 2002, SKOP should become a 5-year programme. One of the measures within SKOP is direct payment for organic agriculture. Direct payments for organic farming were introduced for the first time in 1999, on the basis of private standards. SKOP also provides 10% higher payments for all the measures for farms, which are situated within protected areas.
The Programme of Integrated Rural Development and Village Renovation (CRPOV), introduced in 1991, has a good potential for supporting the projects for sustainable rural development, but this opportunity has not yet been seized properly.
The National Rural Development Programme 2000-2006 is the basis for the financing of agriculture and rural development from national and EU sources. There are several references to sustainable agriculture but their implementation is not outlined sufficiently.
The Slovenian Gene Bank at the Slovenian Agricultural Institute in Ljubljana is responsible for preservation of autochthonous and traditional agricultural plants, especially vegetables. There are also several programmes for preservation of autochthonous animal breeds.
In 1995 the Multi-annual Indicative Programme for cooperation of Slovenia, Austria, Italy and Hungary was prepared for period 1995-1999. For the period 2000-2006 the Joint Programming Document has been formed as a basis for Phare CBC/INTERREG projects. Many activities are running supported by the Fund for Small-Scale Projects, most of them focused on the promotion of sustainable development.
Some municipalities (headed by the two biggest municipalities, the City Community of Ljubljana and the City Community of Maribor) in last 3 years have introduced programmes for the support of organic farming. Non-governmental organizations and public institutions with the support of municipalities have established some local/regional organic farmers' markets.
In 2000, a successful national Programme of renewal of extensive orchards has been started, where sustainable and recently also organic fruit production is being promoted. In general, however, current regional development programmes are not sufficiently taking into account (sustainable) agriculture.

Status: Agriculture contributes below 4% of GDP and employs about 6% of the active labour force, but its importance in the area of development, social and political issues is much higher than macroeconomic indicators can show. Agricultural production is characterized by a small-scale farming structure (an average of 5 ha agricultural land per farm; 85% of farms is smaller than 20 ha) and a large share (over 70%) of agricultural land in less favored areas, as well as a relatively low intensity of farming and a low share of full-time farmers (10%). On the other hand, crop rotation is very poor, with maize as the main crop (over 40% of arable land), used mainly as animal fodder. Although Slovenia has favorable pedo-climatic conditions for a rich variety of agricultural crops, as a result of political decisions in the former Yugoslavia, cattle breeding are now a prevailing agricultural activity. Thus Slovenia is a net importer of agricultural products.
There is a great potential for sustainable agricultural production, offered by well-preserved natural wealth, partly also resulting from former methods of agricultural production (for example, existing extensive orchards). With new programmes, the integrated production of vegetables, fruits, grapes (vineyards) and olives is being introduced. The potential to combine sustainable agriculture and rural development with sustainable tourism is also very high. The number of certified organic farms in Slovenia is rising relatively quickly, from 44 in 1998 to 820 in 2001, although their share of the total number is still below 1%.

Capacity-Building, Education, Training and Awareness-Raising: Within SKOP, several training courses for farmers have been organized in 2001, in order to provide information on the agri-environmental programme. Out of 2 agricultural universities, in 2000 one (Maribor) has introduced study courses on sustainable agriculture and

the other (Biotechnical Faculty, Dept. for Zootechnology, Ljubljana) study courses on sustainable animal breeding. There is a lack of courses in sustainable agriculture, especially organic farming, in basic vocational training (agricultural secondary schools).
The Agricultural Advisory Service (since 1999) and non-governmental organizations (since 1991) are organizing basic training courses on organic farming. The unit for control of organic farming at the Institute for Agriculture and Forestry in Maribor is organizing training courses for inspectors in organic farming and general training courses in organic farming.
Awareness-raising targeted at general public is performed mainly by organic farmers' NGOs and is insufficient owing to the lack of finance. Although availability of basic information on organic farming for farmers has improved in last two years, there is still a great lack of specialized training and advice for organic farmers and farmers converting to organic production.

Information: In the period 1991-1997, the only sources of information on organic farming were NGOs. Information related to sustainable agriculture and rural development can now be obtained from the MAFF, Agricultural Advisory Service and several NGOs. Availability of information on Internet is insufficient.
Information on SKOP has been distributed via training courses, printed materials, farmers' newspapers and other media.

Research and Technologies: There has been some initial research in sustainable / organic agriculture, mainly in the field of agricultural economy and marketing. Few research projects in technology started in 2000. Their share is still very small in comparison with other research in agriculture and rural development.

Financing: Domestic financing comes from the state budget, mainly from MAFF. The body responsible for financial transfers to farmers and other beneficiaries is the Agency for Agricultural Markets and Rural Development, established in 2000. The Agency has been in the end of 2001 accredited also by the EU, which enables it to manage EU pre-accession funds. Vocational education (agricultural secondary schools and faculties/universities) is largely financed by the budget of Ministry of Science and Sports. The Ministry of Environment and Spatial Planning finance some activities. The most important international funding source is European Union. Some smaller funds come from FAO. EU sources are PHARE Cross Border Cooperation (CBC), PHARE Large Scale Infrastructure Facility (LSIF) and since 2002 SAPARD (Special Action Programme for Agriculture and Rural Development).
The part of the Slovenian National Programme for Rural Development, which will be financed by SAPARD, does not specifically address measures for environmental protection. SKOP is therefore financed exclusively by the national budget. Some agri-environmental measures have shown a success, e.g. introduction of direct payments for organic farming in 1999 has resulted in a relatively rapid increase in farms converting to organic.
Numbers from the national budget showing relevant spending: (Compensatory payments and stabilization of market stated to enable comparisons)

Year 2000: Total budget of the MAFF was 34.524 mio SIT.	
Compensatory payments	9.991 mio SIT
Stabilization of market	5.760 mio SIT
EKO1 (less favoured areas)	2.562 mio SIT
SKOP (EKO2 and EKO3)	0,5 mio SIT (out of which organic farming cca. 0,5%)
Rural Development	1 mio SIT
Year 2001: Total budget of the MAFF was 46.462 mio SIT.	
Compensatory payments	9.600 mio SIT
Stabilization of market	7.132 mio SIT
EKO1 (less favoured areas)	3.439 mio SIT
SKOP (EKO2 and EKO3)	2 mio SIT

Rural Development	1 mio SIT

Cooperation: International cooperation is limited and takes place mainly with neighbouring countries (particularly Austria); the actors involved are some public institutions as well as non-governmental organizations. Development of organic farming has benefited a great deal from this cooperation.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: The Slovenian Ministry of Environment is responsible for nature conservation issues. Its administrative and technical advisory body is the Agency of the Republic of Slovenia for Environment consisting of sub-units. Nature Conservation is a part of the Environment unit. Seven regional Institutes for conservation of natural and cultural heritage act as technical supervisory bodies at the local level.
The overall capacity for the implementation of the Convention on Biological Diversity is restricted to a few people within the Slovenian Ministry of Environment and commitment from other sectors is still lacking.
The National Biodiversity Conservation Strategy is considered as a part of the obligations of the Republic of Slovenia to the implementation of the Convention on Biological Diversity, the National Programme for Environment and the Nature Conservation Act and is the responsibility of the Slovenian Ministry of Environment and Physical Planning. A draft Strategy has just been presented for comments.
The Environmental Protection Act passed in 1993 represents the regulatory system for both environmental protection and nature conservation. A Nature Conservation Act was adopted in 1999, which, among other provisions, established a legal basis for the integration of nature conservation principles into other sectors.
Recently, the draft National Biodiversity Conservation Strategy has been prepared as a long-term vision for activities at international, national and local levels based on European and global strategic documents. The focus of the Strategy is on the organization of nature conservation, in-situ conservation (establishing a system of protected areas and management for species and habitat conservation), and integration of nature conservation principles into other policies. Its main objectives thus include: conservation of the current state of Biological Diversity at the genetic, species and ecosystem levels; and, installation of sustainable development into all sectors of public policy.
During the preparation of the National Biodiversity Conservation Strategy a participatory approach has been introduced to involve different institutions, governmental and non-governmental organizations that might have an interest in biodiversity issues, including the key economic sectors. Several working groups were established to cover genetic, species and ecosystem components of biodiversity protection. The Strategy comprises three main chapters (Current Status of Biological and Landscape Diversity in Slovenia, Strategy of Conservation of the Biological and Landscape Diversity, and Action Plans). The Government by the end of the year 2001 should adopt the Strategy.

Programmes and Projects: In 1995, the Slovenian parliament endorsed a programme of designation of protected areas in Slovenia, which provided a basis for a new concept of protected areas. Consequently, a proposal was prepared which introduced changes to the National land-use plan. According to this proposal up to 30% of the Slovenian territory will be included in different categories of protected areas management.
EU financial support, using different instruments and funds, especially the EU Agri-Environmental Programme and Measures and Structural Funds should provide additional financial resources for biodiversity conservation actions.
See also under **Decision-Making**.

Status: It can be summarized that Slovenia has a significant value in biodiversity which is due to the following characteristics: It has rich biological and landscape diversity within a small surface area; It shows high diversity and endemism in troglobiontic species; It is a corridor area and an ecotone between the Dinaric mountains and the Alps; the Pannonian plain and Mediterranean basin; It covers a relatively large forest ecosystem complex with vital populations of big mammals (brown bear, lynx, wolf); It maintains natural and semi-natural ecosystems in relatively good ecological conditions; and, It covers diverse pedoclimatic characteristics.

Capacity-Building, Education, Training and Awareness-Raising: At the moment no organized campaign is taking place, actions being generally of a sporadic nature. The situation with environmental NGOs in Slovenia could be described as having one or two major organizations and several others, which are not very well organized. Cooperation and integration of relevant NGOs needs to be strengthened. Recently, the Ministry of Environment has produced a leaflet on the Convention of Biological Diversity for wider dissemination.

Information: Information on biodiversity in Slovenia is available is as follows: the Red Data Book has just been updated and the results will soon be available on the internet; an Inventory of wetlands has been completed in 2001; the project on habitat mapping is being implemented; a database on natural values and biodiversity is available on the Internet (Circa - nature interest group); and, the Eurowaternet database is also available on the Internet
The role of NGOs in implementation of the Convention for Biological Diversity should be strengthened.

Research and Technologies: The nature research institutes in Slovenia or independent scientists are currently carrying out several projects on basic research related to biodiversity and are supported by the Slovenian Ministry of Science and Technology. The results of these projects can contribute to an increase in knowledge of biological diversity and can be applicable for nature conservation purposes.

Financing: The Ministry of Environment claims that in the State Budget for the years 2002 and 2003 greater financial support will be provided for environmental (and therefore also conservation) issues.

Cooperation: The Convention on Biological Diversity was signed in 1992 and ratified in 1996.
Other major international agreements and conventions have also been signed and ratified, including: The Ramsar Convention; World Heritage Convention; Bonn Convention; Bern Convention; CITES; Barcelona Convention; Alpine Convention.
Slovenia is participating in the Ministerial processes “Environment for Europe” and “Protection of Forests of Europe.” It is also participating in the implementation of the Pan-European Biological and Landscape Diversity Strategy and it has already drafted the Environmental Pre-Accession Strategy for integration with the EU.

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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: In Slovenia there is no central coordinating body, which task would facilitate solely the transfer of Environmentally Sound Technologies (EST). Innovation Relay Centre of Slovenia was set up as an EU wide project and it helps organizations to obtain and exchange the technical information they need to continually innovate. The geographical region is the EU and the candidate countries. Within the scope of their work they also cover the subject area Protecting man and environment.

Environmental Protection Act provides legal basis for the introduction of the cleaner production concept and consequently also for the transfer of the Environmentally Sound Technologies. EU integration of Slovenia will follow the 13 directives of the EU for accelerated development of innovation. In addition, transposed EU Directive on Integrated Pollution Prevention and Control legally introduces the concept of Best Available Technology (BAT). Different tax regulations (the CO2, wastewater and waste tax) indirectly serve as incentives for EST to Slovenia.

A comprehensive legislation and the selection of non-legal instruments that would directly promote EST to and from Slovenia do not yet exist. Existing legislation on Intellectual Property does not especially encourage innovation with the view to promoting inventions in development and transfers of Environmentally Sound Technologies, nevertheless there are some patents (Slovene and foreign holders) which focus on the EST but the question remains however, how their commercialization could be achieved.

Biotechnologies: In 2001 the Ministry of Environment and Spatial Planning established a new Unit for Biotechnology. Its task will be to prepare relevant legislation and to ensure appropriate coordination among the relevant ministries and the Inspectorate for Environment and Spatial Planning to ensure an adequate level of cooperation in decision making in the field of biotechnology as well as appropriate monitoring and legislation enforcement. The main groups involved are: the scientific community and industry in particular pharmaceutical and food processing industries, the agriculture sector, media, non governmental organizations (consumers' protection, environmental, organic farmers).

As predicted in the draft law on GMOs, the central decision making body will be within the powers of the Ministry of Environment. Nevertheless the decisions in the relevant fields will be taken in conformity with the Ministry of Agriculture, Forestry and Food and Ministry of Health. According to the current draft Law, a special Commission on biotechnology will be set up and will serve as a consultation body to the government on the issues related to the contained use, deliberate release and placing on the market of genetically modified organisms. A sub-commission on biotechnology which was set up by the ordinance of the Government will continue to exist after the new GMO law is passed and will be looking at the synergy with the Commission under the new GMO law. Under the constituency of the Ministry of Health, a Council for Food Safety is being established and a working group on biotechnology will be set up shortly. It is expected that the Framework law on GMOs will be adopted at the end of 2001 or in January - February 2002. Sub laws to the framework laws are expected to be adopted within six months after the law is enacted. The law will regulate work with GMOs in contained systems, deliberate release and placing on the market. The law will be made operational with several sub regulations. The current proposal transposes relevant EU legislation and it contains certain elements from the Biosafety Protocol, which Slovenia signed in 2000. The ratification of the protocol is in preparation but it cannot be really predicted when Slovenia will ratify it. According to the law the scientific committee will be set up and its role will be to give an opinion on any particular application. In addition to this a special commission is anticipated within the draft law, which will serve as an advisory body to the Government. The public will be involved in the decision making process and its comments will need to be assessed and taken into consideration prior to the decision being taken.

Programmes and Projects:

Technologies: Slovenia does not have a National Innovation Strategy and therefore no special policies that would systematically promote the innovation and transfer of environmentally sound technologies. National Environmental

Action Programme lists various aspects of introduction of the environmentally sound technologies and it acknowledges the importance of the establishment of the Cleaner Production Centre. As stated earlier such Centre in Slovenia does not exist yet and the operative programme to elaborate NEAP in details is not yet in place.
In the year 2000 Slovenia prepared the Strategy for Reduction of Greenhouse Gas Emissions and the programme for its operationalization is under the preparation. To some extent it will accelerate the transfer of EST to/from Slovenia.
The Government of Slovenia proposed Programme for Stimulation/facilitation of the Technological Development by the Year 2003. One of the aims of the proposed document is also linking the stimulation of the technological development with the investments into environment protection. With the accelerated cooperation between different actors in the innovation processes (private and public sector, synergy between market oriented research and development programmes and those who direct governmental programme in the areas of science, health, defense, environmental protection) the government will set up a system of industrial and intellectual property and will accelerate the development of spin-off companies. The programme also recognize the importance of the increased importance of appropriate management of technologies, including environmentally sound ones.[6]
Project Regional Innovation and Technology Transfer Strategies for Slovenia aims at the enhancing the innovative capacity of the EU region of Slovenia with the help of the better collaboration between SMEs, research institutions, Universities, public sector and the development agencies in Slovenia. The project will provide a basis and infrastructure and know how which will facilitate development of innovations.[7] As mentioned already the project does focus only on the EST but these technologies will be represented. It could be suggested that similar programmes, which would focus entirely on the EST should be developed as a follow up stage from the existing programme.
Eco-fund provides favourable loans to the business to facilitate the transfer of EST (call for proposals is focusing on two broad areas: environmentally sound technologies and products and on devices and technologies for environmental protection). Few success stories (funding in new varnishing technologies in appliances and wood industry) have been recorded so far. In the near future it is expected that investments will be required for new technologies for reducing packaging waste, due to fact that the legislation regulating this area will enter into the force. The Eco-fund is preparing a new funding scheme (its launch is anticipated in mid 2002), which will support individuals to invest into renewable energy resources and energy efficiency.[9]
A one year project "Cleaner Production 2001" is funded partially by the Ministry of Economy, Chamber of Commerce and Industry and most likely also by the government of Austria. Its aim is introduction of the Cleaner production approach in the selected companies (13 involved in the project in the year 2001/02).[13]
As indicated, the Operational Programme for the implementation of the Strategy for Reduction of Greenhouse Gas Emissions is now under the preparation and could have a positive effect on the transfer of the EST.
Biotechnologies: The National Environmental Protection Programme is a document where certain activities with respect to genetic engineering/biotechnology are predicted. The activities were not executed according to the initial timeframe. No separate Strategy or Policy on genetic engineering and biotechnology development has been prepared by the end of October 2001. Currently there are no programmes at the national level in this subject area. When the framework law on the GMOs is adopted it is expected that the Action plan for its implementation will be prepared. Genetically modified organisms will also be addressed in the Strategy of Nature Protection, which is currently under preparation.

Status:
Technologies: In the years 1994 and 1995 there were two attempts for systematic introduction of the Cleaner production concept but only a pilot stage has been carried out in both cases, due to the lack of entrepreneurs approach.2 Some initiatives to promote this concept still exists but are not well coordinated. International Centre for Sustainable Development was set up recently and aims to promote the ecotechnological optimization of industry, and the sustainable improvement of the quality of living in Slovenia and Europe. In Maribor, in the framework of the Štajerski Technological park in Maribor a Cleaner Production Centre was also set up. Neither of these Centres serves as a national cleaner production centre.

The Government plans to introduce different measures, which will stimulate innovations (to divert some financing into innovation needs, to serve as a guarantee for loans for high technological enterprises, to finance development of prototypes, etc.). 5 The environmentally sound technologies are not explicitly listed, but it is understood that the intention is to accelerate the invention of technologies, which will not pose excessive burden on the environment.
Various initiatives for innovation (including EST) exist at different ministries, but the collaboration is rather low and it needs to be strengthened. A Business plan of Slovene National Innovation Agency was prepared but at the moment there is no indication for its actual implementation.
Lack of applied technological research, poor collaboration among enterprises and between enterprises and the research community are characteristic for Slovenia at the moment. Also the existing network for diffusion of the innovations (IRC) is poorly utilized. There are no clear governmental priorities in the R&D area and weak collaboration among ministries.14 Very strong emphasis should be put especially on the Small and Medium Enterprises as they usually lack the financial and also human resources to introduce EST into their production process.
In Slovenia there are three Technological parks (Ljubljanski10, Štajerski11 in Primorski Tehnološki Park). They help to establish competitive business: however, with an exception of the Štajerski Tehnološki Park they do not focus much on the transfer of EST. In the frame of the Štajerski Tehnološki Park a Cleaner Production Centre is established while Ljubljanski Tehnološki Park supports few businesses, which are active in developing or using environmentally sound technologies. Wider promotion of such activities within the Technological parks still lacks.
Since 1997 a journal Gospodarski Vestnik organizes a biannual competition where they gave awards in the two distinct categories (environmentally friendly product and energy efficient company). In 2001 they launched the new category of environmentally friendly company and four companies are bidding for the award.
Approximately 120 biggest companies in Slovenia will have to comply with the IPPC provisions no later than 2011 to the certain extent this will also involve the introduction of the environmentally sound technologies into the production processes.
Biotechnologies: Biotechnology/genetic engineering in Slovenia is currently applied only in the food processing and pharmaceuticals industries: Owing to the non-existent legislation in this area it is impossible to estimate the level of commercialization of genetically modified crops, food and feed.

Capacity-Building, Education, Training and Awareness-Raising:
Technologies: Chamber of commerce and industry organized or participated with their presentations at different seminars and workshops related to the introduction of best available technologies (BAT). Staff from the Ministry for Environment and Spatial Planning undergoes training in the various programmes that aim to strengthen the capacity of Slovene decision makers before Slovenia enters into the EU. The most relevant to the EST is training related to the implementation of IPPC directive. In March 2001 Institute for Sustainable Development organized a seminar on ecotechnological optimization and the implications of the compliance with the IPPC directive and the concept of the cleaner production.
The Government will recommend to the Universities to incorporate in their programmes also the basics of intellectual property rights, management of innovations and market innovation research.15
International Centre for Sustainable Development organizes a postgraduate MBA studies in the area of sustainable development management.16 At the Universities of Ljubljana and Maribor studies at various faculties (Mechanical, Electro Chemical Engineering) offer some subjects to the students, which provide them with some knowledge on the development of the environmentally sound technologies.17
No systematic awareness-raising about the importance and the value of the EST exists in Slovenia.
Biotechnologies: The Ministry of Environment and Spatial Planning staff conducted a few study tours to Brussels (European Commission) and to the Danish Agency for Food and Medicals.
Slovenia participates in a project “Implementation of national biosafety frameworks in pre-accession countries of CEE.” Within this project two workshops were conducted and aimed at the capacity building of inspectorates and other relevant institutions, which will be involved in the implementation of the Biosafety protocol.
In the year 2002 a GEF/UNEP project will start on capacity building for the implementation of the Biosafety Protocol.

The National Institute for Biology has developed a methodology for qualitative testing methods for determination of GMOs and is now in the process of developing the techniques for the quantitative determination of GMOs.
Secondary school: a small number of seminars for professors in the secondary school was organized to increase the level of education on the potential benefits of genetic engineering in plant breeding 19.
Biotechnical Faculty: a new interdisciplinary postgraduate programme was launched and in the year 2000 the first group of students20 completed it.
At the graduate and postgraduate level a few programmes that cover the subject of genetic engineering and biotechnology exist at the University of Ljubljana and the University of Maribor.
An awareness raising campaign was initially launched by the non governmental organizations but it has mobilized all interested stakeholders especially legislators and the scientific community. The public debate that has been created is putting pressure to adopt a stringent legal framework on the issue and to ratify the Biosafety Protocol. The debate also puts pressure on industry to speed up the process of preparing mandatory labelling of GMOs and its derivatives.

Information:
Technologies: In the Agenda 21, chapter 34 the availability of scientific and technological information is one of the essential requirements for sustainable developments. Information on EST and their transfer to/from Slovenia is scattered throughout Slovenia. Innovation Relay Centre of Slovenia provides an advice on innovation and its aim is to help transfer of research achievements and technologies to/from Slovenia. They offer information on technologies (also environmentally sound ones) available at the European level, which are ready to be transferred elsewhere.
Biotechnologies: For the moment there is no comprehensive and easily available database on the use and application of genetic engineering in research and industry. This is partly due to the fact that currently we do not have legislation in place, which would require and regulate availability of the information. The current legislation anticipates establishing public registers for all permits issued by the responsible authority. Some publications, which outline the situation in Slovenia, are nevertheless available to the public.

Research and Technologies:
Technologies: At the Ministry for Education, Science and Sports no specific programme for development of Environmentally Sound Technologies exist. Such projects are financed within other subject areas such as biotechnology, chemical and mechanic engineering.
In the frame of the EU research programme called 5th framework programme, currently the application is being submitted for research and application of Solar thermal collectors (Slovenia co-coordinator, and the invention is patented in Slovenia).18
Life - Environment is another EU initiative aiming to stimulate the innovation of environmentally sound technologies by supporting the development of pilot or demonstration projects. In the year 2000, out of 9 applications submitted, 4 were innovation covering various subject areas (thrifty energy sources, reuse of waste oils for new products, from coal dust and thermo power plant ash a special material was made which could be used for the sealing of the water intrusion sites in the coalmines). One of these four was awarded a grant. In the year 2001 (the call for proposal is still open at the moment) the same number of projects that cover the area of innovation of EST is submitted.19
Extensive research is being conducted in the role of constructed wetlands in wastewater treatment and sustainable rehabilitation of landfill sites (one of the research projects done by Limnos was awarded the Lillehammer Award in June 2001 in the framework of EUREKA - the biggest industrial developing programme in the Europe and others domestic and international awards).20
Biotechnologies: After the independence of Slovenia, the Ministry for Science established an independent research programme in the area of Biotechnology.
The faculties and public research institutes that deal with this issue are as follows: Biotechnical Faculty, Faculty for Chemistry and Chemical Industry (both at the University of Ljubljana and at the University of Maribor), Institute Jozef Stefan, National Institute for Biology, Institute for hop production, Institute for Chemistry, Institute for

agriculture. There are also some private entities dealing with research in this area and among them are the most significant two pharmaceuticals companies Lek and KRKA.
Research in the field of biotechnology is divided into four groups: *Microbial*—focusing among others on yeast microorganisms, microorganisms for treatment of biological waste water, etc; *Plant*—development of biotechnological production of secondary metabolites in plant cultures, potato transformation to become resistant to the Colorado beetle (patented in Slovenia and EU), possibilities of the use of marker genes in improving the agricultural properties of plants, (among others: tomato cucumber, hop and onion), methods for wood protection, etc; *Animal*—analysis of pigs genome for the purpose of further selection, in vitro fertilization and the expression role of recipient genes, possibilities of synthesis and isolation of animal proteins in heterologous systems; and, *Pharmaceutical and medicinal*—identification of molecular reasons for inherited diseases, diagnostic value of the cysteine proteinases and their inhibitors for early discovery of cancer, etc. 21.
The Ministry for Environment and Spatial Planning is currently financing a study, which will give an insight into the potential harmful impacts of the release of Bt-corn into defined environments.
Slovene researchers are participating in research projects within the NATO science programme and the 5th framework programme. In this programme 25 projects, in which Slovene research institutions were involved, were proposed for the subject area of biotechnology in the period 1999 - 2001. Three of the projects were approved and four institutions are taking part in these projects. The approved projects focus on two broader subject areas: biotechnology in relation to medicine and biotechnology in relation to agriculture22.

Financing:
Technologies: State budget, and investment co-financing scheme under the EcoFund to support the transfer of EST. Funding for this is also facilitated via EU programmes (Phare, Ispa, 5th Framework Programme, Life - Environment, Socrates). The financial resources from the International programme for the territory of Balkans - Pact for Stability programme (the available financial resources could be also utilized for the EST). Additional sources of funding for this area are obtained from the various UN bodies, mainly UNIDO and UNDP.
Biotechnologies: Domestic financing comes from the state budget (the Ministry for Education Science and Sports, Ministry for Environment and Spatial Planning, are the main sources of funding). International funding sources are mainly the European Union and also NATO, as well as UN bodies. For the three approved projects under the 5th Framework programme approximately 1.113.604 EURO will be needed. Of this, the European Commission and the difference 296.992 EURO will be covered by the participating institutions.23 will fund 816.612 EURO
In the year 2000 the Ministry of Education, Science and Sport financed 13 basic research projects in the area of biotechnology. For these projects overall 26,9 million Slovene Tolars were spent (approximately 130.000,00 EUR). In addition, 7 applied research projects were approved for financing, and received a total sum of 7,6 million Slovene Tolars (app. 35.000,00 EUR). The institutions that were awarded funding were the following: National institute for Chemistry, National Institute for Biology, Faculty for Chemistry and Chemical Engineering at the University of Ljubljana, Faculty for Biotechnology, Jožef Stefan Institute, Institute for Blood Transfusion, Limnos, KRKA, BIA.24
In the framework of programme financing for the period 1999 - 2003 Ministry of Education, Science and Sport finances (entirely or partially) 14 research programmes. The total funding for the biotechnology research in the framework of this programme will be 210 million Slovene Tolars (approximately 1 million EUR). The following institutions will be awarded these funds: Faculty for Biotechnology, National institute for Chemistry, National Institute for Biology, Jožef Stefan Institute, Agricultural Institute, and Veterinary Faculty at the University of Ljubljana.25

Cooperation:
Technologies: The collaboration of Slovenia internationally is relatively strong in the area of the EST, sometimes stronger than it is the cooperation among the domestic organizations. As mentioned earlier, Slovenia collaborates with the South-East European countries and especially with the EU member states (Austria, Germany, Ireland, Italy) and other candidate counties. Also there are collaborations with the other countries (Switzerland, USA, Canada). The cooperation with the developing countries is rather limited.

Biotechnologies: Slovenia has collaborated in the field of genetic engineering in several bilateral and multilateral programmes. At the bilateral level institutions in Slovenia collaborated with ones in France, Croatia, Macedonia, Bosnia and Herzegovina, China, Hungary, Germany, Great Britain and USA. At the multilateral level the cooperation was facilitated through following programmes: EUREKA, COPERNICUS, COST, TEMPUS PHARE, UNESCO. The cooperation within the country was mainly supported by the pharmaceutical industries as well as by food processing and paper industry. In the framework of the 5th Framework programme, Slovenian institutions cooperate with many countries amongst which are: Germany, Spain, France, Finland, Italy, Israel, Lithuania, Great Britain, Ireland, Scotland, and, Greece.

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

Decision-Making: The Ministry of Environment and Spatial Planning (MESP) and the Ministry of Economy are responsible for integrated coastal zone management. In addition, the MESP; the Ministries of Defense (Civil Protection) and Transport (Maritime Directorate) are responsible for Marine environmental protection. Sustainable use and conservation of marine living resources is dealt with in the MESP and the Ministry of Agriculture, Forestry and Food. There is an Inter-ministerial Agreement on Co-operation concerning Protection, Rescue in cases of Emergency during Accidents involving Dangerous Substances. Slovenia also has an Advisory Board concerning Informal Co-ordination of the Barcelona Convention. Regarding the size of the Slovenian part of the Adriatic Sea, there are precise national regulations on fishing including limitations on fishing practices, gears, fishing locations, timing, and permissible fish size. All these aim to encourage sustainable use and conservation of marine living resources. Regulations concerning protected areas (national parks, monuments and reserves) are being created and adopted. Slovenia is also developing management plans for protected areas. Under the Slovenian Environment Protection Act, prior assessment of major activities with potentially significant adverse impact on the marine environment and the living standards of coastal population are mandatory for any proposed new development. In order to strengthen marine environmental protection, charges for water pollution have been introduced. The national policy on oceans is integrated into general national strategies and programmes, such as in the National Environmental Action Plan (NEAP) that was adopted by the Slovenian Parliament in September 1999. The document includes a special paragraph, related to the Slovenian coastal zone as a sensitive area, which tackles the problem of cooperation between administrations at the national and local level, calling for a permanent institutional arrangement. Water protection, marine environmental protection, sustainable use of resources, solid waste treatment, and nature protection are included in other paragraphs of the National Environmental Action Programme. The private sector and small-scale fishermen are ad hoc participants in national processes at both national and local levels. Representatives of local authorities, business and industry (Regional Chamber of Commerce) are members of the Steering Committee and Coordinating Group of the Slovenian Coastal Zone Management Project. The scientific and technological community and representatives from agriculture are involved in sectoral group work within the framework of the project.

Programmes and Projects: The integrated coastal zone management (ICZM) project is being implemented. The international Code of Conduct for Responsible Fishing will be incorporated into the ICZM programme of the Slovenian coastal region. The Slovenian Coastal Zone Management Project is being upgraded into a permanent activity concerning development, environmental protection and natural resource protection in the Slovenian coastal zone. The Municipality of Koper, for example, is administering planned land use, protected areas, and infrastructure for integrated coastal management purposes. In addition to the National Environmental Action Plan, the following programmes are related to marine environment protection from both land-based and sea-based activities: National Programme of Action for the Protection of the Marine Environment from Land-Based Activities (in development), the National Programme for the Monitoring of the Marine Environment, and the National Intervention Plan in an Event of Pollution at Sea. Major projects and activities related to the sustainable development of marine and coastal areas in Slovenia include: sewerage system construction; construction of wastewater treatment plants; and upgrading measures for the management of protected areas.
For the period 2001-2006 there are two investment priorities which will influence the environment in the coastal area: introduction and efficient operation of the Vessel Traffic System in Slovenia which will offer support in search and rescue missions at sea, coordination and environmental protection and consequently, this will prevent environmental pollution. The second project is further investment in the construction of the Port of Koper, where in the period 2001-2006 the following capital projects are planned with different impact on the state of environment: the construction of pier III, the deepening of basin III and the construction of a new quayside area and infrastructure on pier II.

In the environmental field around the Adriatic Sea basin priority is to be given to the construction or upgrading of wastewater treatment plants or the sewerage system in Koper (50,000 PE), Izola (30,000 PE) and Piran (30,000 PE) (tertiary treatment) as well as for secondary treatment in Ilirska Bistrica (9,500 PE), Sežana (6,000 PE), Pivka (3,250 PE) and other settlements in the Regional Park Snežnik (in establishment), Landscape Park Škocjanske jame, Regional Park Karst (in establishment) and the Landscape park Dragonja.
The Coastal Sea River Basin is a sensitive and water-deficient area according to the following criteria: Urban Waste Water Directive; Drinking Water Directive; coastal sea eutrophication area; protected area for bathing water; protected area of water quality for fish and shellfish; refer to Water Framework Directive, the programme provides integral measures for sustainable water supply and wastewater management in Coastal Sea River Basin; concept of the co-financing TA for water supply investment programme by Phare LSIF 1999 prepared concept programme of water supply, wastewater drainage and treatment for the co-financing TA by Phare LSIF 1999 prepared and planned investment for ISPA co-financing 2003.
Area of the Ilirska Bistrica is potentially sensitive area according to criteria: Urban Waste Water Directive; protection of the Notranjska river protected area and investment programme to be co-financed by PHARE CBC 1999 prepared.
The first park founded on the basis of the Nature Conservation Act is the Seèoveljske Soline Landscape Park established by government decree of April 2001. On the coast, near Koper is another landscape park - Škocjanski Zatok, serving to protect a brackish ecosystem.

Status: In recent decades the coastal region of Slovenia has been exposed to strong developmental pressures. Both the biological diversity and cultural heterogeneity of the Slovenian coast face substantial threats. The quality of the coastal sea, drinking water (with an emphasis on the actual threat to the Rižana spring because of transport routes) and the surface karst waters of Rižana and Badaševica are deteriorating. The basic public utility infrastructure is incomplete or decrepit, wastewater treatment plants are defective or inadequate and the problem of waste disposal has still not been solved. Sea quality has also deteriorated because of transboundary pollution (the river Po in Italy); seaborne dense traffic transport with big ships in a shallow sea like the Bay of Trieste; and agriculture with melioration of valleys, construction of water intakes, soil and watercourse pollution by fertilizers and pesticides. The fishing of white fish is questionable. The seasonal pressure exercised on the coast makes coastal area management even more difficult.
The Gulf of Trieste is the most northern part of the Adriatic Sea and has specific oceanographic features because it is enclosed, shallow (less than 25 m) and has numerous freshwater inflows. The rivers with an average discharge of around 7300 x 10 6 m3 per year, which oscillates considerably due to its torrential nature, flow out into the Gulf of Trieste. The inflow from the rivers from the Slovene coast is relatively modest, amounting only to 220 x 10 6 m3 annually. The most important influent is the Soèa river; however, the Rižana river receives the sewage from the total sewerage system of the town of Koper, and industrial and sanitary effluent from the overall catchment area.
The narrower coastal region in Slovenia (Slovenian Istria) covers an area of 344 km2 (appr. 1.7% of the state land) and its population is about appr. 80.000 (4% of the population in the state). This means that the area is twice as densely populated as the average state population. The majority of the inhabitants (more than 80%) live within the 1.5 km wide belt along the coast, which is 46 km long.
The major current uses of the coastal areas include three major population centres. The main activities include transport and communications (Koper harbour - 8 million tons/year), trade, industry (metal, chemical, food), agriculture, aquaculture, tourism and recreation. The primary sources of land-based pollution of the marine environment are municipal waste waters, industrial effluents from metal manufacturing, lacquering, electroplating, food industry and non-point sources (agriculture and atmosphere). In the municipality area of Koper, Izola and Piran, there are about 80 bigger and smaller polluters with releases into the sewerage system or with direct outflows into the sea or rivers. The input of sanitary and technological effluents into the sewerage system network is assessed at 600 x 10 3 m3 per year. The Slovenian Government promotes the primary treatment of municipal sewage discharged to rivers, and supports the establishment and improvement of regulatory and monitoring programmes to control effluent discharge. However, sewage treatment facilities remain unfinished (under construction) due to a

lack of funds, although efforts to resolve this issue are being initiated in some old municipalities such as Koper, Izola, and Piran.
In terms of marine environmental pollution, Hg and Cd are the most important elements in the view of the instructions and recommendations of the UNEP. The input of mercury (Hg) with wastewaters and river inflows is low, which is also confirmed by the results of concentrations of heavy metals in the sediment. The content of Hg marks a decline from the central to the coastal part of the Gulf. The increased content towards the central part of the Gulf of Trieste results from the outflow of the Soèa bringing waters from the outskirts of the former mine in Idrija. The opposite applies to cadmium (Cd), the concentrations are the highest along the coast and then decline towards the center of the Gulf. This is confirmed by the local pollution in the shallow part of the bays. The highest concentrations of Cd are in the sediment of the Rižana estuary and in the middle of the Koper Bay. Waste waters from waste water treatment facilities and sewerage systems bring most of the suspended particles, phosphorus and detergents. Rivers bring nitrogen and some other heavy metals (Cd, Cr, Ni, Fe, Cu and Zn).
The primary sources of sea-based pollution of the marine environment are the harbour of Koper and marinas. The Slovenian Government has appointed inspectors for the environment to identify major types of pollution of the marine environment from land-based sources through the chemical and biological analysis of water. Nevertheless, there are technology constraints hampering the identification of major types of pollution. The impact of shipping on the sustainable management of coastal zones includes light pollution by hydrocarbons, dredging and dumping for waterways (impact unknown), and potential introduction of alien species. Other coastal- and marine-based industries have great impact on reduction of the natural coastline. They also cause local pollution problems, urban sprawl, traffic jams and degradation of landscape values. The Slovenian coast is a naturally sensitive area thus the transboundary impacts are significant. Some 40 million tons cargo per year is handled through the port of Trieste. The percentage of the economy contributed by fishing is small. Total fish catch (including cephalopods and mussels) was 1,991 tons in 1995, and the total volume of marine-culture was 64 tons. Fragile ecosystems in Slovenia include Posidonia oceanografica seagrass. The priority constraints to implementing effective programmes include the lack of permanent coordinating mechanisms between local communities, central government and its agencies, the business sector and civil society organizations, and the lack of an integrated strategy for the sustainable development of the Slovenian coastal zone. These constraints are, nevertheless, being tackled in the Slovenian Coastal Zone Management Project framework.

Capacity-Building, Education, Training and Awareness-Raising: A training course on Integrated Coastal Zone Management as an Instrument for Sustainable Development was organized in 1998. Participants included regional policy makers, civil servants and enterprises. Awareness raising campaigns on sustainable development of oceans and seas include: participation in EXPO 98 in Lisbon; action for the protection of marine turtles; exhibition "Colours of the Bay" and a book exhibition; seminars and lectures in schools; brochures; "Blue Flag Award" for marinas; sport events (1300 km kayak expedition Igoumenitsa - Koper); and, signatures of My Ocean Charter and brochures on protected areas on the coast (Punta Piran, Seèoveljske soline and Strunjan). As an awareness-raising activity at the international level a letter of intent has already been signed between the Municipality of Milje (Italy) and the Municipality of Koper (Slovenia) concerning the international submarine park "Vzalivu Lazaret."
In the forthcoming period the fundamental goal will be to ensure the protection of the sea and coast and the predominantly karstic hinterland in accordance with the principles of sustainable development, on the basis of the widest possible social consensus and with the cooperation of as many participants as possible.

Information: Slovenia is already integrated into the European Environment Information and Observation Network - EIONET that plays a major role and has great responsibility in the common information system.
The legal bases for setting up the Environmental Protection Information System are laid down in Article 69 (monitoring), Article 73 (EPIS) and Article 74 (statistics) of the Environmental Protection Act. Under the National Statistics Act the MESP should propose methods of data collection and processing, while the Statistical Office of the Republic of Slovenia should give its opinion on the MESP's proposal. The provisions have not been implemented. In certain segments the linking of information has been successful: e.g. the EARS, the database on

special waste, etc. However, it is not possible to talk about a harmonized and integrated system, which would satisfy EU requirements (e.g. Eurostat).
Basic data banks, such as basic records, registers and cadastres, are the most important parts of information systems and it is because of them that information systems are built. The main purpose of these banks is to offer a basis for determining the state and trends of environmental pollution and for understanding and knowledge of ecosystems and natural resources in relation to socio-economic indicators. The second purpose is to provide relevant data to support decision-making processes, public information and the preparation of environmental education programmes. These banks are also a basis for environmental statistics and analyses and for various publications (including in electronic form - Internet) public information.
The following national information is available to assist both decision-makers and planners working in the coastal region: fishery and mariculture statistics, data from the monitoring of marine pollution, data on mineral resources (data base at the ARSO), and data from regional prediction for sea-level rise (high tides is among the critical uncertainties). The databases cover natural resources, cultural and socio-economic characteristics, activities and uses, habitats, protected areas, and sea grass beds in coastal zones. Marine degradation caused by land- and sea-based activities, estuaries, wetlands, and spawning and nursery areas are not inventoried. Regular, but limited, assessments are made of the state of the environment of coastal and marine areas due to limited finances. Nevertheless, Slovenia is able to measure improvements and changes to the coastal and marine environment. The Hydro-meteorological Unit within EARS in Ljubljana and Municipality of Koper uses geographic Information Systems (GIS). The information is made available through brochures and reports such as the Annual Statistical Review and Report on the Environment. More information can be found from: MESP and Statistical Office of the Republic of Slovenia. The coordination of national and regional observation programmes and the provision of forecasts need improvement. The Slovenian Government participates in the development of socio-economic and environmental indicators, systematic observation systems, and mussel watch programmes.

Research and Technologies: The determining factors for decision-making in the choice of technologies are related to technical regulations and standards, which in 2001 are currently harmonized with those of the EU. Introduction of new technologies and multilateral transboundary cooperation between research institutions, is one of the major achievements among the sea research activities (National Institute of Biology, Marine Biological station etc.) Processes like data acquisition, data storage and transmission rely on sophisticated technologies and data transfer protocols, between research institutions on national and more broadly on an Adriatic or Mediterranean scale (National Monitoring programme, Adriatic sea integrated Coastal areas and river basin Management system pilot project - ADRICOSM project, Barcelona Convention application)
Priority investments in the Coastal Sea River Basin in the field of water supply are investment in an additional source of water supply for the coast and coastal Karst area. The necessary investment documentation should be prepared by 2001. Financing of the preparation of this investment documentation is provided by EU LSIF technical assistance funds, state and municipal budgets. Additionally, the national programme of monitoring the sea and watercourses and the national programme for preventing accidents at sea should be completed, and the regional programme for solid and liquid waste management as well as the programme for natural resource management should be prepared.

Financing: This sector is financed through the national budget, the local community budget and by external assistance (EU funds, bilateral technical cooperation). External funding support is received for the regional coastal water supply (Rižana Waterworks). In addition, the World Bank supports the Primorska Regional Water Supply.
The total estimated cost of the most important investment in wastewater collecting and treatment systems in the Koper, Izola, and Piran coastal sea river basin is US$ 47,1 millions. The year of completion will be 2005. Sources of funding: tax, foreign sources, the municipal budget, the national budget and other sources. The total estimated cost of investment in wastewater collecting and treatment systems in Ilirska Bistrica, which is in progress, is US$ 5,2 millions. The year of completion will be 2003. Sources of funding: tax, foreign sources, municipal budget, national budget and other sources.

Cooperation: The UN Convention on the Law of the Sea was ratified in 1995. Slovenia has adopted its National Programme for the Adaptation of the Acquis Communitaire (NPAA) which includes, inter alia, all EU environmental legislation, including those related to marine affairs and fisheries. Slovenia is a Party to the following agreements: 1963 (Vienna) Convention on Civil Liability for Nuclear Damage; 1969 (Brussels) Convention on Civil Liability for Oil Pollution Damages; 1969 (Brussels) Convention - Intervention on the High Seas in Case of Oil Poll Casualties; 1971 (Ramsar) Convention - Wetlands of International Importance 1982 (Paris) Amendment; 1971 (Brussels) Convention on the Establishment of International Fund for Compensation Oil Pollution Damage; 1972 (Paris) Convention on the Protection of the World Cultural and Natural Heritage; 1972 (London) Convention on the Prevention of Marine pollution by Dumping of Wastes; 1973 (London) International Convention for Prevention Pollution form Ships (MARPOL); 1978 (London) Protocol (segregated ballast); 1978 (London) Annex III on Hazardous Substances; 1978 (London) Annex IV on Sewage; 1978 (London) Annex V on Garbage; 1979 (Bonn) Convention on Protection of Migratory Species of Animals; 1982 (Montego Bay) Convention on the Law of the Sea; 1985 (Vienna) Convention - Protection of the Ozone Layer; 1987 (Montreal) Protocol - Substances that Deplete the Ozone Layer; 1990 (London) Amendment to Protocol; 1986 (Vienna) Convention on Early Notification of Nuclear Accidents; 1986 (Vienna) Convention on Assistance in the Case of Nuclear Accident; 1989 (Basel) Convention - Control of Transboundary Movements of Hazardous Wastes; 1992 (Rio) Convention - Biological Diversity; 1992 (New York) Framework Convention - Climate Change; and, 1994 (Vienna) Convention on Nuclear Safety.

Regional and sub-regional agreements include: 1950 (Paris) International Convention for the Protection of Birds; 1969 (London) European Convention - Protection of Archaeological Heritage; (Barcelona) Convention - Protocol - Mediterranean Sea against Pollution; 1976 (Barcelona) Protocol - Dumping; 1976 (Barcelona) Protocol - Co-operation in Case of Emergency; 1980 (Athens) Protocol Land-based Sources Pollution; 1982 (Geneva) Protocol - Special Protected Areas; 1994 (Madrid) Protocol against pollution from exploration/exploitation; 1979 (Geneva) Convention - Long-range Transboundary Air Pollution; 1984 (Geneva) Protocol - Financing of Co-operative Programme (EMEP); 1994 (Oslo) Protocol - Further Reduction of Sulphur Emissions - signed; 1991 (Salzburg) Convention on the Protection of the Alps; 1994 Protocol on physical planning and sustainable development - signed; 1994 Protocol on Hillside Farming - signed; 1994 Protocol on Nature Protection and Landscape Management - signed; 1995 Protocol on Tourism - signed; 1995 Protocol on Mountain Forests - signed; 1993 (Lugano) Convention - Civil Liability for Damage from Activities Dangerous For the Environment - signed; 1994 (Lisbon) Energy Charter Treaty - signed; 1994 (Lisbon) Protocol on Energy Efficiency and Related Aspects - signed; and, 1994 (Sofia) Convention on Cooperation for the Protection and Sustainable Use of the Danube River - signed. Slovenia participates in the United Nations Environment Programme (UNEP) Regional Seas Programme for the Mediterranean (MEDPOL), the Fourth Framework Programme of the European Union on "Environment," and in the Alpine Observation of the Northern Adriatic (Adria) programme. Other bilateral, multilateral and international cooperation includes: European Union PHARE funds; bilateral cooperation with Flanders, Belgium; and the Trilateral Commission (Slovenia, Croatia, and Italy) for Protection of the Adriatic Sea.

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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: The Ministry of Environment and Spatial Planning (MESP) is the government body responsible for coordinating water resource management and development, and policy at the national level. The Ministry of Health is responsible for the monitoring of drinking water. The State Secretary for Environment and State Undersecretary within the Water Management Division are the focal point within the MESP. At the sub-national level there is the river basin authority as local party (division) of the same Ministry. The MESP controls water resource registers and ground water balances. The objectives and basic guidelines in the protection and use of waters as a natural public resource are defined in the National Environmental Action Plan (NEAP). The Government as the custodian of all natural resources for the Republic of Slovenia is obliged to enforce the general principles of water resource management based on ecosystem and economic foundations and to treat water as a crucial factor in sustainable development. In the 1996 report of the Nature Protection Authority, it is expected that there will be acceptance of a uniform methodology for groundwater protection, acceptance of new decrees describing groundwater protection zones, measures for groundwater protection, and, if necessary, renewal of accepted decrees. Communication is regular and includes informing of the public (press releases, press conferences, interviews, etc.) and a range of other activities (regular and occasional publications, organization of public events, etc.). Interested members of the public can participate in the drawing-up of general legal acts and strategic/planning documents. NGOs are already participating in the process of preparing strategy and programme documents. They will also be included in the decision-making process in the future, namely on the level of river basins, where the council of interested stakeholders and other water users will be established. These councils, to be established in the 8 mayor river basin districts, will be responsible for resolution of conflicts in the field of water management.

The general legislation and regulatory framework for water management is the Water Act of 1984. A new Water Act will be adopted in 2002. Specific legislation for the use of sewage sludge in agriculture includes various decrees amongst which are: Decree on the Input of Dangerous Substances and Plant Nutrients into the Soil and the Decree on the Limit, Warning and Critical Concentration Values of Dangerous Substances in Soil (OG, 68/96); etc. The following new legislation regarding the quality of surface and ground water is in preparation and should be adopted in the 2002: Regulation on water quality standards of surface fresh water and groundwater; Ordinance on the monitoring requirements concerning the quality of surface water; and Ordinance on the ecological quality standards of water. The Water Law establishes Water Reserves in protect areas where drinking water, thermal, mineral, and medicinal water are significant. Local Authorities define the protected areas and specific measures. The new Water Law will define the respective responsibilities of Local Authorities and the State with respect to water. A pricing policy for cost-recovery and equitable allocation of water will also be put in place with the adoption of the new Water Act and the Water strategy programme in 2002. The specific targets of the policy in the agricultural sector are the optimization of water resources and water use for irrigation; in the industrial sector: use of treated water, reuse of industrial wastewater, use of sources of lower quality, economic price of water; for household use: economic price, loss reduction in water supply systems, optimization of use.
In order to prevent pollution of freshwater supplies, the Slovenian government is applying the following measures: polluter pays principle; protection of water resources (active and passive, passive with protection zones, active with negative pumping); and construction of waste water treatment plants. The strategy to conserve freshwater is through the optimization of water use in all sectors. There is a policy for protection against floods and droughts and recovery actions. The standards used to measure water are as follows: Standards for drinking water of the RS: Decree on good hygienic quality of drinking water (OG, 46/97); and, for quality monitoring of surface water the methodology recommended by World organizations is used. Standards for quality of surface water: Decree on classification of surface waters and coastal sea (OG, 6/78); and, Decree on maximum allowed concentration of radionucleotides and dangerous substances in surface waters and coastal sea (OG, 8/78). For evaluation of organic

substances in water WHO Recommendations are used. There are no quality standards for concentration of Metals in sediments, although the data from natural containing of Metals in geological bases of carbonate sediments are used. Drinking water quality is regulated by the act on the Wholesomeness of Foodstuffs and Articles in General use, the Rules on the Quality of Drinking Water and their amendments. Legislation does not include private water supply networks, does not include all parameters and does not stipulate the assurance of the quality of measurements.
In addition to the problem of the urban environment the NEAP pays special attention to specific environmental problems of the littoral, rural areas and Karst. In accordance with its guidelines for preserving biodiversity, the comprehensive management of environmental issues is urgently needed for preserving large ecosystems of special environmental significance, which are partially included into sensitive areas due to eutrophication.
In the field of urban water supply and natural water conservation and protection coordination of activities and of different factors at the local and national levels is particularly important.

Programmes and Projects: At the end of 1999 the National Assembly adopted the NEAP. According to this document one of the main strategic goals is the construction of water supply networks in water deficient areas. Policy objectives in the field of water management are: raising the rational use of water resources; preferential investments in the area of water supply, which simultaneously restore drainage and waste water treatment; reducing the losses in water systems; moving to the construction of regional water systems and combining the small systems and preventing inappropriate interventions into the water environment. In addition to investments, the NEAP provides for local-level training programmes, monitoring and institutional organization for the purpose of preparing, managing and supervising the implementation of water-supply projects and wastewater collection and treatment within the river basins. In the sphere of water supply, the NEAP places emphasis on programme measures, i.e. on the preparation of professional bases for the protection of sources of drinking water and the preparation of rehabilitation programmes for areas in which sources of drinking water are potentially endangered. The MESP, in association with local communities, is bound by law (the EPA) to work out technical bases for the determination of protected sources of drinking water and the required rehabilitation programmes for potentially endangered sources of water. See also under **Decision-Making** and **Capacity-Building, Education, Training and Awareness-Raising**.

Status: The great quantity of water resources, though not equally distributed in time and space, is one of Slovenia's greatest comparative advantages; regrettably, the same cannot be said of the quality of waters and the manner in which water resources are used. Scattered settlement and numerous settlements with less than 2,000 inhabitants have a large impact on the extent and structure of municipal infrastructure and on the organization of municipal services. Systems of water supply, municipal wastewater treatment and disposal, and precipitation collection are either non-existent or inadequate and dispersed owing to the topographical features of Slovenia.
Drinking water supply for 77% of the population is organized through public networks (treated), 14% from private wells, 5% from rainwater reservoirs and 4% from other sources. Approximately 47% of the total amount of piped drinking water is used by households, 39% by industry and the manufacturing sector, while 8% are supplied to livestock farms, 5% to the tourist industry and 1% to all other purposes.
The major constraints faced by the Government in reaching its objectives in the water sector are the lack of appropriate institutional capacity (development of national and local institutions), and the need for additional financial sources. Problems in the field of the protection of drinking water resources include: shortage of drinking water in the dry season in areas deficient in water; sizeable losses due to poor maintenance of water-supply networks - reduction of losses to an economically acceptable level is often equivalent to an additional water source; protection of water sources: more than half the public water-supply systems have no specific water-source protection zones with corresponding regimes of management, nor do they carry out supervision of those zones; quality of drinking water: the quality of groundwater and springs is not improving, the most endangered being the karst springs; both chemical and microbiological pollution is present; karst springs often become muddy since the self-purifying capacity of karst groundwater is incomparably weaker than that of alluvial groundwater; securing permanent and proper measurement in water collection areas; water supply exploits only underground sources (groundwater, wells) and does not utilize surface waters for processing activities, e.g. in industry.

Floodplains cover a relatively small area (3-5 % of national territory), however, since floods tend to affect valley areas, some densely populated areas, including all their economic activities - transport, agriculture, industry and others - are vulnerable to flooding.
Recently, smaller streams are becoming more and more exploited for small hydroelectric power plants, which are commonly of a derivative type and are therefore extremely destructive to streams.
Owing to excessive water content, much agricultural land in Slovenia has traditionally been drained. In the past the main goal of drainage was to change the function of wetlands, which is in contradiction with the protection of the natural environment and conservation of biodiversity.
In recent years irrigation became extremely important owing to increased intensive production of high-quality food. Irrigation makes agriculture one of the largest water consumers.
Reclamation systems also contribute to environmental pollution through the wash-out of excess fertilizers and pesticides into the soil - groundwater in alluvial sediments and karst underground is the most severely affected by this pollution.
The underground waters are contaminated particularly with nitrates, pesticides, metals and organic compounds. The sources of pollution are agriculture, industry and municipalities. Within the water quality monitoring programme in Slovenia, groundwater is controlled twice a year at 84 sampling points, distributed in 15 groundwater fields. All 168 samples are analyzed according to an extended programme including the basic physico-chemical parameters, analysis of heavy metals and organic micropollutants and the record of the organic compounds present. The quality of groundwater is assessed according to the European standards for drinking water.
Owing to favourable natural conditions and the needs of the construction sector, the exploitation of sediments from river beds is a traditional commercial activity affecting our water streams. The demand dictates uncontrolled exploitation with long-term negative impacts, while complete abandonment of the activity would cause negative impacts on water regimes and the morphology of streams through sedimentation and flooding.

Capacity-Building, Education, Training and Awareness-Raising: The implementation of integrated and sustainable water management falls within the responsibility of government institutions at both the national and local level, sharing the responsibility for the implementation of national policy, and other economic and non-economic institutions (factors), non-governmental organizations and the public, with a common goal to harmonies various interests concerning the use and protection of water and adjoining land. One of the conditions for the successful implementation of the water action plan is to establish a communication with the public. Such communication should not only comprise the presentation and explanation of the government's environmental protection policy, but should become its constituent part. Important social changes dictated by sustainable development require the support and cooperation of the general public.
15.000 children from primary schools joined the educational project "Drop of Water" organized by the Slovenian Committee for UNICEF, with the aim to focus children on the value of drinking water, its reasonable use, where there is enough water and its shortage in the undeveloped countries (they raised 10,000 US$ which was enough to build four wells in Namibia - the Agenda 21 goal is to build global partnerships).
At the state level there is continuing (extra-institutional) education and training of experts responsible for water management and provision of regular information to the public on the state of the aquatic environment.

Information: The process of integration of Slovenia into the European Environment Information and Observation Network - EIONET is already completed, and plays a major role and has great responsibility in the common information system.
The legal bases for setting up the EPIS are laid down in Article 69 (monitoring), Article 73 (EPIS) and Article 74 (statistics) of the Environmental Protection Act. Under the National Statistics Act the MESP should propose methods of data collection and processing, while the Statistical Office of the Republic of Slovenia should give its opinion on the MESP's proposal. The provisions have not been implemented. In certain segments the linking of information technologies has been successful: e.g. the EARS, the database on special waste, etc. However, it is not possible to talk about a harmonized and integrated system, which would satisfy EU requirements (e.g. Eurostat).

Basic data banks, such as basic records, registers and cadastres, are the most important parts of information systems and it is because of them that information systems are built. The main purpose of these banks is to offer a basis for determining the state and trends of environmental pollution and for understanding and knowledge of ecosystems and natural resources in relation to socio-economic indicators. The second purpose is to provide relevant data to support decision-making processes, public information and the preparation of environmental education programmes. These banks are also a basis for environmental statistics and analyses and for various publications (including in electronic form - Internet) to provide public information.
In the agricultural sector the Environmental Agency of the Republic of Slovenia (EARS) performs regular monitoring of water use and emissions into land; the EARS distributes the information on the quantity and the state of surface and groundwater streams. State monitoring of the quality of water has already been set up as well as the water sources register and register of emissions into water. Monitoring of the quality of drinking water is well established.

Research and Technologies: At the state level until 2000 there was the Water Research Programme for the period, which directly supported the national programme in the field of waters. One continuous activity is to upgrade the current research system by the long-term planning of scientific studies, by promoting the cooperation of technical and nature science professions, by introducing modern methods and technologies for the protection and exploitation of waters and by motivating and training domestic experts. In the near future there is a basic goal to control the entire cycle of environmental protection research - identification of problems, simulation of procedures, formulation of proposed solutions and monitoring of their effectiveness. Overall, research in Slovenia is fragmented and unharmonized. There is a lack of long-term strategic and interdisciplinary research aimed at understanding of basic processes in order to manage current and future environmental problems. The study of social, legal, economic and health aspects of environmental protection is deficient. There is a critical shortage of staff in these fields, and the transfer of foreign knowledge and technology is not effective enough.
To increase water supply, research is being undertaken into new sources of water as in the artificial enrichment of ground water sources. The private sector is being included in designing (expert work), constructing and co-financing, and eventually operating the infrastructure for supply and treatment of water.

Financing: The following are the available sources of funding for the implementation of programmes and investments for water supply and for wastewater collecting and treatment: state budget appropriation for construction of municipal infrastructure; the wastewater tax; municipal budgetary funds; loans from the Eco Fund (non-commercial loans granted according to the selected priorities of the National Environmental Action Plan); long-term provisions for solving environmental problems reserved by enterprises under the Privatization Act; EU grants to associate members for the implementation of the Acquis Communitaire (PHARE Cross-Border Cooperation Programme (CBC), PHARE Large-Scale Infrastructure Facility Programme (LSIF), PHARE National Programme); resources from pre-accession funds as of 2000 (ISPA fund for higher-cost infrastructure projects); loans from international financial institutions (WB, EBRD, EIB) and private-sector investments: mainly under concession contracts, and especially for wastewater treatment projects, which enables higher-quality and cost-effective services (B.O.T. models).
State Budgetary funds include funds earmarked for the building of municipal infrastructure, allocated annually by the MESP on the basis of public tenders for projects for urban wastewater collection and treatment, and for projects for drinking-water supply and protection of water sources.
Taxpayers liable to a water burden tax are, under legal regulations, exempt from payment of that tax if they submit an investment programme and invest funds in wastewater collection and treatment projects. The funds so collected represent a significant direct source of funding of infrastructure facilities for water protection.
Since 1994 the European Commission has, through the PHARE programme, co-financed lower-cost infrastructure projects in the field of environmental protection, and in 1998 it launched the LSIF programme, whose non-repayable funds are earmarked for the implementation of European environmental legislation in the field of water supply and wastewater collection and treatment. During 2000-2006, the European Commission has earmarked grant funds for associate members through the ISPA programme (Instrument for Structural Policies for Preaccession).

Projects eligible for grant budgetary funds, loans from the Eco Fund, and foreign grants or loans from multilateral creditors must, in terms of their content, follow the implementation guidelines contained in European legislation, and must be included on the NEAP priority list or the priority lists of the environmental protection action plans for the corresponding sectors.
Funds are scarce for both new investments, and the operation and maintenance of completed investment projects. The following are problems in connection with potential sources of funding demand attention: the prices of municipal services are not yet formed the way they are formed in the EU, although with the decision on price formation a step away from former administrative pricing has been made; polluters do not provide a stable systemic source of funds; the internalization of external pollution costs is too slow and the upper limit for municipal borrowing is 10% of the municipal budget.
From 1995 to 2000, 91 capital projects for water supply were so-financed with state budgetary funds amounting to totalling US$ 3,9 millions. From 1994 to 2000 the public Eco Fund approved loans to local communities for the construction of the water supply system in the amount of US$ 10,3 millions.
The draft project budget for the programme of protection of the aquatic environment within the 2001-2003 period is 391,1 mio US$ and within the 2004-2006 period is 519,4 mio US$ (in constant prices 1999). Sources of investment will be total (public, private, national and communities).
The cost of approximation to the EU in the field of water protection is estimated to be 1.260,2 US$ mio that is 43% of the total NEAP activities. 73% of the funding will be from the state budget.
According to preliminary estimates, future investments in the field of water supply will be financed from the following potential domestic sources: wastewater tax; sewage connection fee (municipal contribution) and sewage service charge; grant funds from the national and municipal budgets and loans by the Eco Fund earmarked for the building of infrastructural facilities in the field of the protection of waters coming under the competence of local communities. Other available sources are foreign funds, including EU grants and credit funds from international financial institutions and the private banking sector.

Cooperation: Slovenia signed several international conventions concerning water: Convention on the Protection of the Mediterranean and Protocol on the Protected Areas of the Mediterranean (Barcelona, 1992); Convention on the Protection of Trans-Border Watercourses and Lakes (Helsinki, 1992); Convention on Cooperation in the Protection and Use of the River Danube Waters (Sofia, 1994); Convention on Marshes of International Concern (Ramsar, 1993); Convention on Biodiversity (Rio de Janeiro, 1992); The Alps Convention (Salzburg, 1991).
Slovenia, as a member of the Danube convention, is also adopting the international early warning system, which is already in operation. Slovenia has a number of bilateral agreements with neighbouring countries such as Italy, Austria, Hungary, and Croatia regarding shared water resources. It is also party to the Convention on cooperation for the protection and sustainable use of the Danube river, the Barcelona Convention and the Convention on the protection and use of transboundary watercourses and international lakes.
Conventions signed with neighbouring countries are: with Austria—Agreement on the Regulation of River Drava Waters and Agreement on the Regulation of River Mura Waters; with Hungary—Agreement on the Regulation of Border Watercourses; with Italy—Agreement on the Regulation of the River Soèa, Agreement on the Protection of the Adriatic (Slovenia, Italy, Croatia); with Croatia—Agreement on the Regulation of Waters, Agreement on the Protection of the Adriatic (Slovenia, Italy, Croatia).

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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 National Chemicals Bureau operates as a constituent body of the Ministry of Health. It was founded in May 1999 pursuant to the Chemicals Act and deals with matters related to the preparation and implementation of acts and implementing regulations which govern the area of chemicals, procedures and requirements for registering new substances, assessment of new and existing substances, maintaining the list of substances and exchanging information on substances, placing biocides onto the market, conditions for the production, trade in and use of chemicals; classification, labelling and packing of chemicals and measures for their appropriate handling; implementation of the Convention on the Prohibition of Chemical Weapons and the Chemical Weapons Act, coordination of good laboratory practice, coordination of the Intersectoral Committee for Sound Management of Chemicals, coordination of the monitoring of pesticides and other hazardous substances in foodstuffs and drinking water, tasks relating to cosmetic products and other tasks set out in regulations. They are also responsible for keeping register of safety sheets for hazardous preparations and for the exchange of information among competent bodies on both the domestic and international levels, preparation of publications 28.
In 1996 the government established as the Inter-Sectoral Commission for the Handling of Hazardous Substances and in 2000 the slightly modified Intersectoral Committee for Sound Management of Chemicals was set up. The scope of its activities was narrowed down to some extent. Nevertheless, the Committee consists of 18 members (state secretaries from 10 ministries), the representatives of scientific and research community, Chamber of Commerce, non governmental organizations, labour unions, and other relevant governmental offices as well as from the Council for Environmental Protection at the National Parliament. General tasks of the Committee are: to coordinate the work of sectors responsible for the area of dangerous substances; to draw up a national profile on the management of dangerous substances (assessments of the situation); to draw up a national action programme for chemical safety and cooperation in the international pilot project; and, to draft a Dangerous Substances Act which will also include the legal basis for good laboratory practice. The previous group set up several subcommittees and it is expected that with the narrower scope of the Committee activities the number of subcommittees will diminish.
The Association of Chemical and Rubber Industries, working under the umbrella of the Chamber of Commerce and Industry of Slovenia, defined as one of its priority tasks assistance to its members in aligning their operations with the requirements of new regulations on chemicals, environmental, safety at work and prevention of illegal traffic. This Association includes 580 member companies, out of which about 130 are either producers or use toxic chemicals in their production.29 Currently in Slovenia the area of Chemicals is regulated through approximately 40 laws and sub-laws. The most important is however the Chemicals Acts which was adopted in 1999 and other relevant legislation (Acts on Environment, Phyto-pharmaceuthicals, etc. as well as the Acts with which Slovenia ratified international conventions such as Basel, Rotterdam, PIC, etc.). Slovenia as a candidate country for EU accession is harmonizing its legislation with the acquis communitaire. In the area of (toxic) chemicals Slovenia is almost entirely harmonized with the EU legislation. It is however quite difficult for Slovenia to keep chasing the moving target of ever changing EU legislation in the area of chemicals. One of the biggest problems from the point of view of the legislation is the overlapping of certain responsibilities on the one hand and on the other hand some significant gaps. Both present a threat to efficient enforcement of the legislation and also inefficient use of scarce (financial and human) resources.
To ensure better implementation of the PIC convention the import regime was imposed to all PIC chemicals (permissions are needed). In addition a regulation about the PIC procedures was adopted in the year 2001.31
The following stakeholders are involved in the environmentally sound management of toxic chemicals in Slovenia: experts (science and research), legislators, handlers of toxic chemicals, non-governmental organizations, representatives of industry and unions.

Programmes and Projects: According to the National Environmental Protection Programme, the Programme for Chemicals Management, and the Protection against the Ecological Consequences of Industrial Accidents. The

preparations of this Programme started in the year 2001 and the end of 2002 expects completion. The programme will have a horizontal approach and will try to focus on the whole life-cycle of chemicals. More detailed vertical programmes will also be prepared, focusing more on the specific subject areas. At least two other documents are of importance for the sound management of toxic chemicals: the National Programme of Public Health and the National Programme on Health and Safety at Work. One of the most essential projects conducted in the past n Slovenia was the UNITAR/IOMC Pilot Programme to Assist Countries in Implementing National Action Programmes for Integrated Chemicals Management. Currently, two important projects at the governmental level are: the Phare Twinning Project on Chemical Safety (overall objective is to develop an integrated and effective horizontal legislation harmonized with the Acquis Communautaire in the priority areas of the chemical safety field in Slovenia in a wider intersectoral framework, started in March 2001); and, a UNEP project on Persistent Toxic Chemicals (its aim is to prepare management plans for PTC's for Slovenia as a pilot project; the project starts at the end of 2001). The Association of Chemical and Rubber Industries began to implement a Responsible Care Programme, a voluntary commitment of the chemical industry to constantly improve its safety, health and environmental performance. The number of companies committed to the programme grows year by year. The companies implementing the programme cover at the moment about 60 % of the total chemical industry turnover.32

Status: Since Slovenia has no important raw materials for the production of chemicals, its production of basic chemicals is relatively low. The predominant products are downstream products (pharmaceuticals, paints and coatings, adhesives, cosmetics etc). Consequently, the majority of toxic chemicals are imported, in many cases as preparations. The same is true for exports: the majority of toxic chemicals are exported not as such but as preparations, therefore it is very difficult to talk about the quantities of toxic chemicals findin g their final user in Slovenia. The first two applications for export permission under PIC are now being processed; no application has yet been submitted for import. In Slovenia no PIC chemicals that are prohibited to use in Slovenia are either produced or sold to other countries. As part of the voluntary PIC procedure Slovenia received 7 notifications in the last five years.

Capacity-Building, Education, Training and Awareness-Raising: As indicated above, several capacity building programmes are taking place currently in Slovenia, which among others include different workshops and other activities for the decision makers at different levels. Three experts are being trained in the Netherlands for risk assessment, each for half of the year. The programme will continue in the future as there is a strong need for such experts in Slovenia. Two EU Phare-funded projects for capacity building are also currently taking place at the Chamber of Commerce and Industry. The first project (CHEMLEG) aims at training the experts who would advise on site to the interested parties on implementation of the legislation. The second project CHEMFED aims at increasing the capacity of the Association in order to gain the capacity to follow the rapid developments in this field and also to become equal partners to the government. A Special Regulation on the Training of Responsible Persons in Companies was issued in the year 2000 and up till now, approximately 1000 individuals have attended training and examination. Attempts are being made to introduce the subject of sound management of chemicals at the various educational levels, starting from the primary school curricula. With the improved education in the subject awareness is expected to increase. However at present there is no awareness raising campaign (in the governmental, business or non governmental sector) focusing on the subject. A few leaflets have been published by the National Chemicals Bureau (on the labelling of the dangerous chemicals) and by the NGO Consumers Association of Slovenia.

Information: The first report produced by the Intersectoral Commission for the Handling of Hazardous Substances was issued in 1997 and provides an overview of the situation in the priority areas in Slovenia. The second report was prepared in the year 2000. Both reports are available on the ISCHHS web page.
Databases and registers on particular subjects are available at the relevant ministries (health, environment, agriculture). Some data are fully accessible to the public; however some have limited access to information to protect confidential information. The National Chemicals Bureau intends to establish a Product Register, but it has

produced no results so far. The industry proposal is to set up a simplified product register, based only on the production and import/export statistics and the composition of preparations based on Safety Data Sheets; this would be a more realistic target for the beginning and more likely to give some results in the near future.

Research and Technologies: The main problem of the research work being carried out in Slovenia by a number of laboratories is the gap between them and the industry, so that eventual results of the research work have problems finding their application in real life. A lot of work has to be done to improve this situation, notably the involvement of the industry into research planning work. During the preparation of this report it was not possible to identify research projects carried out in Slovenia (or abroad with Slovenian partners), which would focus on the sound management of toxic chemicals.

Financing: The programme Water Tolar (implemented in collaboration with Helios (paint producing company) the Ministry of Environment and Spatial Planning and the various Local communities) provides for a fund, which is used to finance different projects, related to the clean up of bodies of water throughout Slovenia. Funding for the activities related to the sound management of toxic chemicals comes from the state budget, European Union and other international organizations such as UNEP, UINTAR/IOMC.

Cooperation: Slovenia cooperates closely with the Intergovernmental Forum on Chemical Safety - IFCS whose main aim is to accelerate implementation of the principles set in Chapter 19 of Agenda 21. Owing to its active role in IFCS, Slovenia has become a member of the IFCS Standing Committee. It also collaborates with other international organizations like WHO, OECD and has in the past years collaborated in different bilateral projects (Switzerland - good laboratory practice, Germany, Sweden, Austria, The Netherlands).

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

Decision-Making:

Hazardous Wastes: The main actors on the field of hazardous waste management in Slovenia are the national government, ministries (environment, defense, economy and health), companies, Chamber of Commerce and local municipal companies. Non-governmental organizations are mainly present in the role of public control, which is limited by the information available to them on hazardous waste. Public pressure, exercised by the non-governmental organizations in the case of the illegally exported hazardous waste from two domestic companies from Slovenia to Colombia in the year 1994, has contributed to more rapid implementation of the provisions of the Basel Convention. The Ministry of Environment and Spatial Planning is solely responsible for the implementation and enforcement of the provisions of waste legislation. In recent years, as part of the EU approximation process, several legal acts on hazardous waste management obligations have been adopted. The main emphasis at the national level is given to the construction of the necessary hazardous waste management facilities. Activities in the field of minimization and source reduction of hazardous waste are mainly left to private and entrepreneurial initiatives.

The basic legal act is the Environmental Protection Act adopted in 1993. Additional legal acts have been adopted since: ordinances on PCB removal (2000), landfill of waste (2000), management of waste from titanium dioxide production (2000), waste oil management (1998), waste management (1998); statutes on import, export and transit of waste (1996), management of batteries containing hazardous materials (2000), management of waste containing asbestos (2001); regulations on air emissions from hazardous waste incinerators (2000) and some additional acts on waste from slaughterhouses (1998) and from medical facilities (1995). The Basel Convention on hazardous waste import, export and their removal was ratified by the Republic of Slovenia in 1993. The responsible national authority for the implementation of the Basel Convention is the Environment Agency, which issues the permits and licenses for export, import and transit of waste.

Solid Wastes: The main actors in the field of solid waste are the government of the Republic of Slovenia, the Ministry of the Environment and Spatial Planning, the Chamber of Commerce, local communities (municipalities), local public utilities and other companies. The responsibility for the preparation of strategic documents and waste legislation is mainly focused in the Ministry of the Environment and Spatial Planning. Local communities are responsible for decisions on the management of solid waste (in accordance with strategies and legislative framework). The Environmental Agency is responsible for issuing permits and certificates for different modes of waste management (transport, export, removal, recovery, landfilling etc.). The Agency is also responsible for reporting on waste. Non-governmental organizations are mainly present in the role of public control, which is limited by the availability of information on solid waste. Only recently the Ministry of the Environment and Spatial Planning has started to try to actively involve NGOs and to create more possibilities for their participation.

In the field of wastewater collecting and treatment, coordination of activities and of different factors at the local and national levels is particularly important. According to the Environmental Protection Act (EPA), the state, i.e. the MESP, is responsible for the overall management of water (OG, 32/93), including wastewater collecting and treatment, while the municipalities, i.e. the local level of management, are responsible for the implementation of those activities. Efficient wastewater collecting and treatment therefore demand that the existing two levels should cooperate at all stages of the strategic planning, preparation, implementation and management of concrete investments.

After gaining independence in 1991 Slovenia changed its legal, economic and social frameworks for environmental protection. The transfer of ownership and subjection of decision-making to profit have had an impact on the decision-making methods. At the moment it is still not possible to foresee the attitude of the new owners towards the environment, but by analogy to developed countries it may be expected that at least in the first phase the role of the government must strengthen, so that it is in charge of introducing mechanisms preventing profit accumulation at the expense of the environment. These changes are enforced by modern environmental legislation, which is closely modelled on EU standards.

The preparation of the NEAP and action plans for individual sectors is provided for by the Environment Protection Act (OG, 32/93). Detailed criteria and guidelines for the preparation of the Action Plan for Urban Wastewater Collecting and Treatment With the Programme of Water-Supply Projects are given in individual decrees dealing with limits on discharges into water and the quality of drinking water. The main criteria for working out the Action Plan and its implementation timetable are determined by the Decree on the Emission of Substances in the Discharge of Wastewater from Urban Waste Water Treatment Plants (OG, 35/96, 90/98) and the Drinking Water Directive (80/778/EEC), with its supplements (81/858/EEC and 90/656/EEC).
Environmental impact assessment in the transboundary context is governed by the act on the Ratification of the Convention on Environmental impact Assessment in the Transboundary Context, adopted in 1998.
Radioactive Wastes: At the national level an adequate waste management structure for safe and environmentally sound management of radioactive waste has been established. According to national legislation, the safe management of radioactive wastes is the responsibility of the operators of the nuclear installations. The Slovenian Nuclear Safety Administration (SNSA) controls the operators. Some specific nuclear waste matters are also the responsibility of the Ministries of Health (Health Inspectorate); Defense (Administration for Civil Defense and Rescue); and Interior. A clearly defined role for a waste management organization is a precondition for efficient waste management. The Agency for Radioactive Waste Management (ARAO) was established by the government for the post operational management of radioactive waste. This Agency is primarily responsible for the safe handling and management of radioactive wastes after they are discharged from nuclear and other facilities. By the governmental decree of 1999, ARAO was assigned the public service for management of radioactive waste from small producers; at the same time the operation of the Central Interim storage system was also transferred to the Agency. The final decision on the strategy for the disposal of low and intermediate radioactive level waste (LILW) and the selection of a site for LILW repository will be approved in Slovenia by the year 2020. The options are the construction of repositories in Slovenia and/or Croatia. The disposal of nuclear waste in other countries will also be considered. The decision on long term spent fuel management is deferred. The decision whether to reprocess the spent fuel or to dispose it in a final repository has been postponed for several decades. In the interim, problems related to spent fuel management will be solved by the use or expansion of existing storage capacities and the provision of additional capacities for intermediate storage. Problems will be solved for the NPP Krško and RR TRIGA Mark II facilities separately. The bulk of spent fuel (218 from 313 fuel rods) from TRIGA reactor was returned to the USA in 1999. This return was possible because of the US decision to accept all spent fuel from research reactors, which use US, enriched uranium.

Programmes and Projects:
Hazardous Wastes: In the year 1996 the national government adopted Strategic Directives on Waste Management. This strategic document also deals partially with hazardous waste. One of the priorities is set as: source reduction and minimization of the toxic potential of waste. The strategic document established several alternatives for future hazardous waste management: construction of a new central landfill; deposit of residues from the incineration or thermal treatment of hazardous wastes into landfills authorized to received mixed wastes; underground storage facility; and export in the transition period.
The National Environmental Protection Programme, adopted by the national parliament in 1999, confirmed the basic priorities and measures in the field of hazardous wastes laid out in the 1996 waste strategy. The waste issue is one of four national priorities. In the field of industrial waste (which implies also hazardous waste) emphasis was given on the construction of the required waste management infrastructure. In addition, several other measures were anticipated, especially those based on market mechanisms (e.g. environmental management schemes, introduction of taxation of waste producers, higher costs of landfill of waste, tax relief schemes for implementing measures, etc.). Initiatives were established for mass and energy recovery of waste and minimization of their toxicity by chemical, thermal or biological stabilization.
The Ministry of Environment and Spatial Planning co-financed projects on: waste oil management; thermal treatment (incineration) of municipal waste; and the degree of PCB contamination in Slovenia. The Ministry of health - Office for chemicals introduced some activities for the collection of waste pesticide packaging and pesticide residues and other toxic materials from the countryside.

Operational waste programmes concerning car batteries, batteries, and wastes containing PCB/PCT are under preparation.

*Solid Wastes***:** The priority measures (programmes and investments) are further determined by detailed criteria contained in: Urban Wastewater Directive (91/271/EEC, 98/15/EC) or the Decree on the Emission of Substances in the Discharge of Wastewater from Urban Waste Water Treatment Plants (OG RS, 35/96, 90/98); the Drinking Water Directive (80/778/EEC), with supplements 81/858/EEC, 90/656/EEC and 91/692/EEC; and the following water quality decrees within the National Programme for the Adoption of the Acquis Communautaire, MOP 1998: Sewage Sludge (86/278/EEC); Groundwater (80/68/EEC), with supplements 90/656/EEC and 91/692/EEC; Nitrates (92/43/EEC); Integral Pollution Prevention Control (96/61/EC), with supplements 90/656/EEC and 91/692/EEC; Substances Dangerous to the Aquatic Environment (76/464/EEC), with supplements 90/656/EEC and 91/692/EEC; Mercury Discharges from Chlor-Alkali Industries (82/176/EEC); Cadmium Discharges (83/513/EEC); Other Mercury Discharges (84/156/EEC); HCH Discharges (84/491/EEC); List of Substances (86/280/EEC), with supplements 88/347/EEC and 90/415/EEC; Habitats (92/43/EEC); Shellfish (79/923/EEC), with supplement 91/692/EEC; Fish Water Directive (78/659/EEC); Surface Water for the Abstraction of Drinking Water (75/440/EEC), with supplements 79/869/EEC, 90/656/EEC and 91/692/EEC; Bathing Water (76/160/EEC), with supplement 90/656/EEC; and, Water Framework Directive (COM/97) 49 – final.

The institutional organization for the implementation of the Action Plan of Urban Wastewater Drainage and Treatment governed by the provisions of the Public Commercial Services Act (OG, 32/93), the Act on Local Government Organization (OG, 72/93, 14/95, 26/97), and the decrees and regulations in this sector. The programme basis is given in the following strategies and programmes: National Environmental Action Programme (NEAP), MESP 1999; National Programme for the Adoption of the Acquis Communautaire, MESP 1998; CRP V2-0139-97: Protection of Waters - legislation and other general environmental protection measures, MESP 1998; DISAE: SLO-107, Implementation of the Urban Wastewater Directive, 1998; GEF - Danube River Basin Pollution Reduction Programme, 1998; Planned Investments in Municipal Infrastructure and the Method of their Funding, Faculty of Economics, Dr. Mojmir Mrak, 1998; and, UN Recommendations to the Countries of Eastern and Central Europe (ECE) - Protection and Sustainable Use of Waters, Recommendation to ECE, UNO, 1995.

The Slovene government has adopted Strategic guidance on waste management. Basic principles of the strategic guidance are: solving the problems of waste at source; the principle of prevention; separate collection of material waste flows; the principle of restoration to nature; rationality of the network of facilities and plants; rationality of environmental management, and preservation of the natural and cultural heritage; and neutralization of disposed waste and improvement of unmanaged tips and historical legacies. The National Environmental Protection Programme, adopted in the year 1999, has confirmed four priority goals in the field of waste management: to reduce waste generation and its danger potential at source; to increase material and energy utilization of waste and reduce greenhouse gas emissions; to set up an effective waste management system; and to gradually eliminate old pollution sources (old burdens).

Since 1997 the main emphasis has been on setting up a waste management infrastructure. The Ministry of the Environment and Spatial Planning actively support regional cooperation among local communities and public local or regional utilities for building up regional waste management centres. In those centres sorting, composting (more MBO/MBS), processing and (regional) landfill facilities will be constructed. The Ministry also gives strong emphasis on constructing one (or two) regional municipal solid waste incinerator(s), including a centralized incinerator in north-east Slovenia (covering ca. 850.000 inhabitants, 280.000 tons/annum capacity).

Operative waste programmes on packaging waste, waste mineral oils, car batteries, are currently under preparation.

As the custodian of natural resources, the State is obliged to enforce the general principles of water management based on the environment and the economy and to take into account water as the crucial factor in sustainable development. The Action programme is focused: to reduce emissions from point sources - wastewater from industry and livestock farms and urban wastewater; to reduce emissions from diffuse sources - intensive agriculture, dispersed settlements without wastewater treatment facilities; on traffic; to restrict old pollution sources threatening the aquatic environment; and to prevent inappropriate activities affecting the aquatic environment

First projections show that building of wastewater treatment plants for settlements with less than 2000 inhabitants and for settlements with between 2000 and 15000 inhabitants will be carried out in the second phase of the

implementation of the NEAP (after 2003). The building of these facilities is the responsibility of local communities therefore it is not possible to estimate the scope and costs of these activities. Some pilot programmes on dismantling waste cars, on reuse of construction waste and one baling facility were introduced.
A new biodegradable waste landfill reduction strategy is also under preparation.
Radioactive Wastes: The Slovenian Government approved two significant documents on high-level radioactive management in 1996: The Strategy on Spent Fuel Management and the Decommissioning Plan for the NPP Krško Facility.
In accordance with the law on the fund for the decommissioning of NE Krško and the disposal of radioactive waste, in 1996 the Ministry of Economy prepared "Decommissioning plan of NE Krško, with a review of the possible ways of realizing decommissioning and its financial needs." The decommissioning plan foresees revision of the plan every three to five years with all input data, in order to consider new knowledge and facts. This creates the basis for the new calculations of costs and the evaluation of the burden on every kWh produced in NE Krško. In the year 2000 a technical assistance group from IAEA visited Slovenia to check the decommissioning plan. They made some recommendations for the improvement of the plan. Their recommendations are considered in the preparation of the terms of reference for the planned revision.
In the year 2000 the Agency for Radioactive Waste Management prepared a proposal for the "Strategy of LILW management." The proposal was presented to the national government for adoption. The Strategy establishes goals for the management of LILW and gives an overview of the situation. The Strategy also identifies various possibilities on how to deal with radioactive waste in the future, by comparison with practice in other countries in order to select a durable solution for the disposal of LILW in Slovenia.

Status:
Hazardous Wastes: In Slovenia around 124,000 tons of hazardous waste is generated per annum in industrial activities (estimation for 1999). In this estimation quantitative data on the hazardous waste component in municipal solid waste and from the energy sector are not included. (In steel, paint and metal production quantities of hazardous waste are decreasing, because of the drop in production together with process modernization.)
A realistic evaluation of the presence of PCBs in Slovenia, made by the Ministry, is around 500 tons of PCB waste (from transformers and big condensers) and 100 tones of contaminated oils with PCB concentrations over 50 ppm (from transformers). In Slovenia, there exists an organized collection system and some take-up facilities for waste oils. In the past, waste oil was mainly regenerated. Today, waste oil is mainly co-incinerated, or used as an additional fuel. One problem still remains: only a small proportion of the waste oil generated annually is currently collected - only 14% of the lubricating oils sold annually are collected as waste oils. Our experience in evaluation shows that 50% of sold oils could be collected later as waste. Annually 12.770 tons of waste oils are generated and 3.200 tons are collected and reused or 25%. 9.570 tons or 75% of waste oils remain out of control (in accordance with data for 1998).
Export of some types of hazardous waste (e.g.. used paints, lacquers) is organized in accordance with the Basel Convention. In most cases it is the only way to manage industrial hazardous waste. Some companies have their own incinerators as a part of their industrial process. Incineration of waste in industrial thermal processes is on a small scale, although some technical possibilities exist (e.g. incineration in cement kilns). In the Republic of Slovenia most used car-batteries (lead) are imported. They are used in the lead-smelter in Mežica. In the years between 1995 and 1998 that import reached ca. 21.000 tons per year. There is only one technically suitable hazardous waste landfill in Slovenia: in Metava by Maribor.
There are several facilities for incineration, co-incineration or energy recovery of some types of hazardous wastes (Salonit Anhovo, Energetika Ravne, LEK Lendava, Pinus Raèe, Alpos Šentjur). There are also some other facilities for managing hazardous waste (MPI Mežica, OPTE Ptuj, Cinkarna Celje, Opekarna Novo mesto and others).
There are no data available on programmes for the reduction of use of toxic chemicals in state or private companies.
Solid Wastes: Activities for achieving the objectives focus on reducing emissions from industry and municipal wastewater treatment plants to aquifers and aquatic environments as well as controlling their impact on groundwater as a source of drinking water. Construction of new sewerage systems with wastewater treatment plants

is imperative for settlements that are not yet connected to such systems. In areas which have been classified as sensitive due to eutrophic waters, a higher degree of wastewater treatment is required (tertiary treatment).
The annual quantity of municipal solid waste is approaching 870.000 tones. Official data clearly show that the total waste stream is increasing. On the other hand, it was only in the year 2000 that weighing of waste at the landfill entrance becomes obligatory. First results will be presented for the year 2001 (at the end of 2001 some active landfills still do not have a weighing machine). In Slovenia there is more than 60 recorded solid waste landfills (52 operating sites in the year 2001). Some specific solid wastes from different parts of industry and the energy sector are landfilled on mono-disposal sites (sites for only one type of waste, mainly in the energy sector) and some industrial disposal sites. There are 27 industrial landfills (as identified in the year 2000). Available capacity of existing landfills is very scarce. In addition, nearly all of the closed landfills represent active pollution sources (old burdens). More than 89% of the population is currently serviced by regular collection of municipal waste. Reconstruction or construction of eight waste landfills has been made in recent years. Separate collection of waste is currently covering around 35% (official estimate) of the population included in some kind of waste collection scheme. Mainly two parts of the municipal waste stream are collected separately - paper and glass. Data on separately collected materials are not available at the national level.
Municipal solid waste is mainly landfilled untreated at the local waste disposal site. Currently there is no municipal waste incineration facility in Slovenia.
Municipalities and municipal administrations in Slovenia play an important role in the management of public utilities and local public environmental protection services.
Currently there is no regional administration, although it would be needed for solving certain environmental problems (e.g. water protection); therefore it is of great importance that municipalities cooperate in addressing common problems. The introduction of a regional level of administration will result in decentralization and transferal of responsibilities for solving environmental problems from the national to the regional level, so municipalities will have to transfer to the regional level those tasks which they can not are incapable of or unwilling to carry out. Only a few municipalities have applied an active environmental protection policy and they continued to do so after the reform of local self-government. Municipal policy is generally restricted to the construction of local (public utility) infrastructure.
Owing to scattered settlement in Slovenia, only 53% of the population lives in areas covered by the sewage system. In addition, sewage pipes are not watertight, resulting in groundwater pollution. The capacity for treating wastewater is 190 mio m3 / year (45%). The technological needs in this area include secondary and tertiary treatment. Only 30% of the population have connections to the sewage system followed by purification plants, and only 15% of wastewater is treated biologically - a treatment method, which is the basic required level of purification. The inflow of storm water into the sewage system is a problem and the sewage systems are not flood-protected to prevent additional pollution from direct discharge. Some natural lakes, karstic underground streams and slow water flows already show signs of eutrophication and water bloom/blooming of algae.
Pollution of the majority of surface waters exceeds the allowed limit (29% - 3rd and 4th grades) and has been spreading towards river headwaters. The quality of groundwater has been declining recently. The most polluted groundwater with nitrates are found in the areas with intensive agricultural use, improperly maintained sewerage systems and thin cover layers.
However, point sources of pollution of water have been improved to the desired extent. Wastewater is treated to some extent for approximately 75% of the population, of which 15% is secondary wastewater treatment, 12% coarse mechanical treatment and 48% primary treatment, including septic tanks.
Many industrial plant and facilities still discharge wastewater into watercourses without any prior treatment. The Decree on the Water Pollution Tax issued in 1995, established an economic mechanism forcing polluters to look for more suitable solutions.
Among the diffused sources of water pollution is intensive agriculture, certain industrial sectors, traffic and dispersed settlements without wastewater collecting systems. Agriculture is responsible for the bulk of groundwater pollution caused by nitrates, phosphates and pesticides (mainly due to intensive arable farming in the north-eastern part of Slovenia) and by organic substances and ammonia compounds generated by livestock farms. Industry bears

the main responsibility for pollution caused by heavy metals (in conjunction with traffic), phenols and organic solvents.
The management of wastewater collection or sewerage systems is provided by 53 companies in Slovenia, 33 of which also provide wastewater treatment (and the management of treatment plants). These companies also provide their activities outside the communities in which they are based, i.e. in neighbouring communities. In two cases, sewers are managed by local communities, and in one case the local community also manages the treatment plant.
The inadequately developed system of supervision of measures aimed at achieving the goals of comprehensive wastewater collecting and treatment, which should encompass the full range of instruments - from the securing of efficient institutional regulation, to legislation, to information systems - is the main cause of the poor effectiveness of the policy of the implementation of the adopted laws, decrees and strategic programmes. As regards the effectiveness of environmental inspection, the main problem is the inadequate number of staff able to deal competently with the largest polluters alone.
Radioactive Wastes: The radioactive wastes generated in nuclear installations and other facilities in Slovenia are stored at the sites. The only exceptions are interim storage of low and intermediate-level waste from medicine, industry and research organizations. There are no special treatment facilities for radioactive waste. The only treatment takes place at the Krško NPP with solidification, compaction, supercompaction and IDDS (in drum drying system). In 2000 approximately 20 t of LILW was sent to Sweden for incineration.
In Slovenia at present there are 19 organization registered for the use of open radiation sources and more than 100 organizations which are using closed radiation sources. More than 300 companies are using fire alarms containing radioactive sources.
The following is a list of nuclear facilities and radioactive waste sites in Slovenia. NPP Krško: twin-loop pressurized water reactor; installed power: 632 Mw; start-up: 1981; supplier: Westinghouse Electric, USA; spent fuel storage capacity: 828 fuel assemblies; status: 594 spent fuel elements stored (is of end of 2000); intermediate-level waste storage capacity: 2240 m3; status: 2158 m3 occupied (as of end of 2000). Z zamenjavo uprajalnikov v NE Krško so nastali še dodatne količine srednje radioaktivnih odpadkov (stara uparjalnika, 600 m3) in 242 sodov in 9 kosov cevastih kontejnerjev s skupnim volumnom okoli 59 m3 (ocena iz leta 1999). Reactor Center of the lnstitut Jozef Stefan Ljubljana (Brinje): swimming pool research reactor TRIGA Mark II, thermal power (steady): 250 kW; thermal power (pulse): 1800 MW; start-up: 1966; supplier: General Atomics, USA; spent fuel storage for TRIGA fuel capacity: 1000 fuel assemblies; status). The pool is empty. In the year 1999 all used fuel rods (215) were re-exported to USA; Central Interim Storage of low- and intermediate-level waste from medicine, industry and research; capacity: 800 m3; status: 60-70 m3 (end of 2000). Žirovski vrh Mine, Gorenja vas: (Uranium mine under decommissioning); in operation: 1985-1990; lifetime production: 607,700 tons of ore, 452.5 tons (Uranium equivalent) of yellow cake; surface storage of 1,548,000 tons of mine waste, ore waste, and red mud; surface storage of 593,000 tons of mill tailings. Zavratec by Idrija: temporary low- and intermediate-level non-licensed (illegal) waste storage, containing 14 m3 of materials contaminated with 10 mCi of Radiurn-226. Radioactive material was relocated to the interim storage at Institut Jozef Stefan in 1999. Rehabilitation of the Zavratec storage site was completed by the year 2000. Radioactive waste was relocated to the interim storage in Brinje. Rehabilitation of Zavratec was completed and it was returned to the local community.

Capacity-Building, Education, Training and Awareness-Raising:
Hazardous Wastes: In recent years many companies have specialized in managing different types of hazardous waste. Anybody who wants to deal with hazardous waste has to be accredited or certified by the Ministry of Environment. There several types of certificates: for receivers, transporters, processors, disposers and exporters.
Intensity of education, training and awareness-raising on national level is low. Because of new legislation on hazardous waste (and waste in general) RS Environmental Agency (former Nature Protection Office) has prepared a set of four interpretative brochures on different pieces of legislation. Some training activities (mainly for industry representatives) have been organized. In the field of hazardous waste as a part of the municipal (solid) waste some intensive educational and informative activities have been organized by the local municipal companies (public utilities). Those activities were in connection with programmes including separate collection of hazardous waste from households.

There is no integrated education and awareness-raising programme on hazardous waste at the national level.
Solid Wastes: Both strategic guidance and the National Environmental Protection Programme are foreseeing implementation of special educational measures for minimization and recycling of waste (brochures, leaflets, TV and radio shows, posters, etc.). One national level awareness-raising campaign was organized in the year 1998. Its content was mainly connected with regional waste management centres as a preparatory (more PR) move to gain support from the local population for siting the centres. Other educational activities on the new waste legislation (seminars, lectures, etc) are being organized. The Ministry actively co-finances events on waste issues (conferences, etc).
A new communication programme as a support for the construction of new regional waste management centres was prepared in the year 2001. Environmental non-governmental organizations were asked to actively participate in those activities. Several workshops were organized in cooperation with different stakeholders on waste, introducing some new methods and approaches, in the year 2001 - basically because the standard "public relation" approach was clearly unsuccessful. More in-depth and broad educational and awareness-raising activities are being organized by the local public utilities. There are immense differences in intensity of awareness-raising and education from one local community to another.
The implementation of the strategy strongly depends on creative cooperation among all those who have a role or task in efforts to improve the quality of the environment: state bodies, municipalities, the commercial sector and NGOs. A quarter of municipalities cooperate with non-governmental organizations, although many municipalities are not familiar with non-governmental organizations operating in their area. Some NGOs with public financial support are playing a crucial role especially in the fields of training and Awareness Raising. Their basic purpose is to make the public in Slovenia understand and support the idea of sustainable development as much as possible. The main goals are: high level of information; to encourage needs for target information; to provide reliable, easily available and comprehensible information about water in the context of SD; to stimulate new lifestyles in agreement with sustainability principles; to inform and educate the public through media and open and improve public discussion on the specific water and SD theme. In order to achieve these goals it is particularly important to provide the public with information based on facts and provided in time to be useful.
Expectations concerning environmental improvements are great, as most of the Slovene citizens wish to live in a healthy and pleasant environment. However, managing disproportion/imbalance does not allow quick solutions to problems.
Radioactive Wastes: Nuclear experts are regularly participating in the education programmes of the IAEA.
The Agency for Radioactive Waste Management is continuously working on awareness raising and education of the public on radioactivity and radioactive waste. The Agency has published several publications with the intention of informing the general public about radioactivity, radioactive waste and the Agency's activities (books: "Radioactive waste-With Knowledge Against Fear, The Most Frequent Questions and Answers about RAW," "Radioactive Waste - a Guide foir Journalist," booklets on RAW, managing RAW and its disposal, video cassettes and CDs about radioactive waste management in Slovenia and elsewhere, newspaper Raopis). The Agency has established the Information Centre on Radioactive Waste, which is situated in the Educational Centre for Nuclear Technology in Brinje. The Agency has also prepared some workshops on the procedure for the selection of the disposal site for LILW, including multi-parameter decision-making methodologies, and the role of geology in finding disposal site for LILW.

Information:
Hazardous Wastes: New legislation on waste management from the year 1998 has established an obligation on industry to report the quantities and types of waste, generated.
On the basis of reports from facilities, the RS Environmental Agency is preparing and publishing an annual "Report on hazardous and other waste which is generated, collected, treated and removed." In the report, aggregated data on all types of generated, collected, treated and removed wastes are published. The report is also available at the Agency home-page (http://www.gov.si/uvn/).
Information, gathered from the issuance of export, import and transit of hazardous waste permits in accordance with the provisions of the Basel Convention, is annually collected, digitized and send to the Basel Convention

Secretariat in the form of an annual report, The report is also available on the agency home-page (http://www.gov.si/uvn/ at the national EIONET focal point).
Almost all of public data are available in aggregated form and are suitable merely for decision-making processes at the national level. More segregated data on quantities, types and composition of hazardous waste on local level are not available and are difficult to access by local communities.
Solid Wastes: New waste legislation has made weighing of waste obligatory for all landfills. Also, waste generators, transporters, separators and removers are obliged to report to the public authority about their quantities of waste. A new digitized database on waste has been established. It contains data on waste from more than 900 companies, and on about 100 companies, which are active in the waste management field.
The legal bases for setting up the EPIS are laid down in Article 69 (monitoring), Article 73 (EPIS) and Article 74 (statistics) of the Environmental Protection Act. Under the National Statistics Act the MESP should propose methods of data collection and processing, while the Statistical Office of the Republic of Slovenia should give its opinion on the MESP's proposal. The provisions have not been operationalized. Basic data banks, such as basic records, registers and cadasters, are the most important parts of information systems and it is because of them that information systems are built. The main purpose of these banks is to offer a basis for determining the state and trends of environmental pollution and for understanding and knowledge of ecosystems and natural resources in relation to socio-economic indicators. The second purpose is to provide relevant data to support decision-making processes, public information and the preparation of environmental education programmes. These banks are also a basis for environmental statistics and analyses and for various publications (including in electronic form - Internet), which provide the public with information. These data collections are designed to serve as a basis for identifying the status and trends of the process of reduction of discharges from sources of pollution. Another intended use of data collections is to provide relevant data to support decision-making processes and the monitoring of the implementation of rehabilitation programmes at a local level, i.e. the implementation of the measures (programmes, investments) provided by the Action Plan. Furthermore, the data collections form the basis for preparing environmental statistics and analyses for various uses - publications, informing the public via electronic (Internet) and other information media, etc.
Within this context, the main problems are the unordered and out-of-date collections of data on the polluter situation (the condition and capacity of infrastructure facilities, the degree of readiness of projects for implementation, local programmes, etc.) and the state of implementation of rehabilitation programmes.
The Hydro-meteorology Unit within EARS is the government body responsible for coordinating and collecting wastewater information at the state level. State monitoring of the quality of water has already been established, as well as the water sources register and the register of emissions into water.
Radioactive Wastes: SNSA is publishing all annual reports on nuclear issues in Slovenia in various media. All reports are available to the public on the internet or in paperback edition. The Agency for Radioactive Waste Management produces an annual report. All reports are available to the public on the internet or in paperback edition.

Research and Technologies:
Hazardous Wastes: In the field of waste minimization, and reduction of resource and toxics use, some projects have been carried out during the past eight years. In the Republic of Slovenia there is no operating clean production center, although the national government has supported (by decision) such an initiative and financial resources have been promised. Any initiatives on technological changes and improving material flows with the objective of minimization of resource usage at the production level is mainly left to cooperation among industry, the scientific community and research institutions.
Solid Wastes: Some demonstration and pilot programmes to optimize waste minimization measures or material and energy recovery, were implemented in the past. Unfortunately there is no data center on waste research issues at the national level. According to available information, the main research centers in Slovenia (National Chemistry Institute, Mining Institute, Geological Institute, Institute Josef Stefan, and both Universities) and some specialized companies (IBE d.d., KIV d.o.o., etc) have also been involved in additional technology research activities. In the year 2000 the Ministry of the Environment and Spatial Planning supported a cooperative project on establishing the

Development and Research Centre on Environmental Technologies (DRCET or RCOT), sited in Celje and organized as a cooperative among local communities, research institutes, and companies. In the field of research there is an expert technical basis for the determination of eutrophication areas and development of the methodology for integrated assessment of impact on the aquatic environment.
No systematic research has yet been conducted on the relation between the degree of water pollution and the health condition of the Slovene population and biodiversity.
A continuous activity is to limit the economical and justified exploitation of fresh water resources, especially those of high-quality. This can be achieved, for example, by introducing dry technologies, etc. Industry is among the largest water users. Its requirements regarding water quality and quantity differ regarding the type of production and technology. Currently the use of water is excessive, not complying with best available technology (BAT) directives which suggest the reduction of water use in industry through the introduction of economical technologies and reuse of treated industrial wastewater in technological processes (closed cycle).
Another activity for water quality protection is to introduce environmentally and economically effective methods for the protection of the aquatic environment using technologies adjusted to the natural conditions and material capacities of Slovenia.
In the assessment of waste water treatment projects the selection among the proposed solutions must ensure the introduction of environmentally sound and economical methods of disposal of sludge.
Radioactive Wastes: Research and technologies include a Research reactor TRIGA Mark 11. Most activities on this reactor are run by the Jozef Stefan Institute.
The Agency for Radioactive Waste Management is currently performing a series of research activities on LILW, establishing links with international experiences and maintaining good international cooperation with exchange of information. Good exchange of information was established with countries that have more experience with planning and developing disposal sites, which are designated for LILW. The complete research programme is strictly related to LILW.

Financing:
Hazardous Wastes: In the period 1995-2001 the Ecological Development Fund (Eko Sklad, a public fund) has co-financed some projects on minimization of hazardous waste in industry (mainly by technology changes and introducing measures for more efficient material flows).
Solid Wastes: The implementation of environmental legislation already adopted that requires considerable investment in waste treatment and disposal and treatment of wastewaters will be very demanding. The first estimates of the costs of implementing legislation harmonized with the EU and carrying out the NEAP indicate that about 2,3 billion US$ will be required for environmental infrastructure alone. Considerable investment in institutions, infrastructure and executive mechanisms will be needed, which will entail new demands upon very limited sources of funds. To this end it will be necessary to introduce additional financial schemes for the involvement of the national budget, municipal budgets, environmental taxes, the Environmental Development fund, the new Phare programme, international financial institutions, and capital from domestic banks and the private sector. It will be particularly important in the years ahead and in the coming decade to raise the share of public budget funds, principally the national budget, spent on promoting environmental investment in the public sector.
Solid wastes: In the field of waste management, construction, sanitation of landfills and other secondary objects or facilities (f.e. sorting, composting, recovery facilities), 24 projects have been successfully co-financed through the annual national public tender for co-financing obligatory local public utilities in the period between 1998-2001. The value of the programme was more the 2,1 billion SIT. The national budget covered on average 40% of the project value (total 800 million SIT).In the period between 1995 and 1997, the national budget offered around 417 million SIT in the same programme for local infrastructure.
The Ecological Development Fund, as a public fund, has assured more than 795 million SIT in credit schemes in the period from 1994 - 2000 for new systems on managing waste. From the state budget or funds merely projects on managing waste were co-financed. Small emphasis was made on prevention, minimization or source reduction measures. There is no active programme on prevention or minimization of waste at the national level.

In the year 2001 a new tax on landfilling biodegradable waste (paper, cardboard, wood, food, etc) was introduced. The tax should be understood as an incentive for separate collection of biodegradable waste in Slovenia. The money collected from the tax will be primarily spent on waste management infrastructure.
A significant financial resource for the construction of municipal infrastructure is the wastewater pollution tax. Since its introduction in 1996 until 2000 US$ 99 million was raised and invested in over 700 projects for wastewater disposal and treatments, which were approved, based on adequate feasibility studies.
From 1995 to 2000, 66 capital projects for wastewater treatment were financed with budgetary funds amounting to US$ 5,5 million, together with 129 capital projects for sewerage system construction worth US$ 7,8 million and 91 capital projects for water supply totalling US$ 4,7 million. From 1994 to 2000 the public Eco Fund approved loans to local communities for the construction of sewerage systems to the amount of US$ 5,5 million, and US$ 3,8 million for the construction of wastewater treatment plants.
At the end of 2000, ISPA (EU fund for large infrastructural investments in environment and transport) financing memoranda were signed on environment - technical assistance in drafting the documentation necessary for the construction of WWTP and sewerage systems (Litija, Zagorje ob Savi, Trbovlje and Hrastnik - US$ 0.2 million, Celje and Lendava - US$ 0.3 million.
In the implementation period before 2020 there is a need for investments of US$ 575,2 million for water quality projects (municipal WWTP and the enlargement of sewerage systems, industrial WWTP and compliance of existing installations: municipal wastewater, textile industry, metal industry, leather industry and other).
It is expected that nearly 51% (US$ 742,9 million, source almost 100 % public sector) of the funds earmarked for the implementation of the NEAP measures in the period 1999-2003 are and will be needed in the fields of water protection.
According to preliminary estimates, investments in the field of wastewater collection and treatment will be financed from the following potential domestic sources: wastewater tax; sewerage connection fee (municipal contribution) and sewage service charge; grant funds from the national and municipal budgets and loans by the Eco Fund earmarked for the building of water protection infrastructure which is the responsibility of local communities.
Other available sources are foreign funds, including EU grants and credit funds from international financial institutions and the private banking sector.
Radioactive Wastes: The financing of radioactive waste management in nuclear and other facilities is included in the costs of operation. Safe radioactive waste management will be financed by the government when a facility ceases operation or when radioactive wastes are discharged from nuclear and other facilities. The only exception is the future decommissioning of the NPP Krško facility where the required funds are collected through special additional costs, assessed to be 0.6! SIT per kWh, and added to the tariffs for the electricity generated.

Cooperation:
Hazardous Wastes: The Republic in Slovenia cooperates in the activities on issues relating to the import, export and transit of hazardous waste, organized by Basel Convention Secretariat and actively takes part at the meetings of the parties of the Convention.
Slovenia is not an OECD country and it has bee attempting to become listed in Annex VII of the Basel Convention.
Solid Wastes: Exchange of information on waste management is a regular practice with several countries. Occasionally there is an exchange of experts or other forms of cooperation to meet specific needs. Several experts participate in international educational programmes; some are recipients of international scholarships. Good cooperation was established with EU institutions and with other accession countries. At the local level international cooperation basically comprises organized excursions (facility sightseeing) for local decision-makers.
Slovenia is primarily orientated towards solving the environmental problems independently and in cooperation with neighbouring regions and countries. Nevertheless, it should plan its global activities, particularly in relation to developing countries. Many of these countries are the weak links in the world chain of environmental problems; on the other hand though, they might significantly alter the global distribution of economic and political power in the coming decades. Slovenia, as a member of the Danube convention, is also adopting the international early warning system, which is already in operation. Slovenia has a number of bilateral agreements with neighbouring countries such as Italy, Austria, Hungary, and Croatia regarding shared water sources. It is also a party to the Convention on

cooperation for the protection and sustainable use of the Danube River, the Barcelona Convention and the Convention on the protection and use of transboundary watercourses and international lakes.
Approximately 15% of Slovenian municipalities cooperate with municipalities in other countries (mostly transboundary cooperation with Austria, Italy and Hungary).
Radioactive Wastes: Slovenia, as part or the former Yugoslavia, initiated international agreements with Italy, the Czech Republic, the Slovak Republic, Hungary, and Poland. These agreements cover cooperation in the peaceful uses of nuclear energy. After its independence, Slovenia has concluded additional agreements in the field of nuclear related matters with Hungary, Canada, Austria, and the United States Nuclear Regulatory Commission.
Slovenia is also a party to several international and regional conventions or agreements, among other also to the CTBT (ratified in 1999) and non-proliferation of nuclear weapons.
In the year 2001 Slovenia become the first non-OECD party of the Paris convention on responsibility to third persons in the field of nuclear energy.
SNSA and ARAO cooperate well with almost all international institutes and agencies in the field of radioactive waste management. ARAO actively participates in various programmes run by the EU and the IAEA. Since 1998 it has been a member of the Club of Agencies, which links European agencies for radioactive waste management.

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CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-Making: The Office for Equal Opportunities (OEO) is a governmental institution, operating as an expert service. It was established in 1992 as the Office for Women's Policy, and in 2001 it was renamed as the Office for Equal Opportunities. Among the most important activities which are defined in the decree passed by the government, are the following: supervision of the position of women, and implementation of their rights guaranteed by the constitution, laws and international conventions; discussion of regulations, acts and measures adopted by the government and ministries from the perspective of women and equal opportunities; participation in the preparation of such documents, enhancing of gender equality by informing and sensitization and discussion of initiatives from women's non-governmental organizations. The Slovenian Ombudsman began work in 1995. The Ombudsman was introduced for the needs of individuals, as its basic task is to identify and prevent violations of human rights and other irregularities, and to eliminate their consequences. The definition of its competencies in terms of contents shows that the jurisdiction of the Ombudsman undoubtedly includes investigation into cases in which individuals believe there has been a violation of specific human rights, which are protected by the Constitution or by international legislation. The Constitution secures equal human rights and fundamental freedoms, irrespective of nationality, race, sex, language, religion, political or other persuasions, material position, birth, education, social position or any other circumstances. Everyone is equal before the law. The Constitution envisages the responsibility of the state for the creation of opportunities for employment and for work. The state shall ensure the protection thereof by statute. The Constitution also guarantees the freedom to work, a free choice of employment for everyone and prohibits forced work. The Penal Code of the Republic of Slovenia lists violations of the principle of equality as one of the criminal offences against human rights. Article 6 of a proposed Law on Labour Relations explicitly prohibits discrimination in the workplace on the grounds of sex. In addition it explicitly determines that equal opportunities and equal treatment for both men and women shall be secured in cases of employment, promotion, training, education, retraining, salaries and other incomes, rewarding, absence from work, working conditions, working hours and the process of receiving notice on contract of employment.

In order to stimulate parents, fathers in particular, to a greater sharing of parental leave the new Law on Parenthood and Family Incomes introduced paternity leave as an individual and non-transferable right exclusively for fathers. Parental leave is no longer intended exclusively for the mother but can be used by both parents. Health care for women (pregnancy, birth, contraception) is defined separately in the legislation on health care. Compulsory health insurance ensures that women have free medical services at their disposal in matters concerning family planning, contraception (with the exception of condoms), pregnancy and birth, and that all insured persons pay a maximum of 15% of the full price of medical fees for finding the cause of and curing reduced fertility and for artificial insemination, sterilization and abortions (the Law on Health Care and Health Insurance).

Programmes and Projects: In the State Programme for Harmonization of legislation with the legislation of the European Union through to the end of the year 2002, adoption of an Equal Opportunities Law is expected. OEO has established an interdepartmental working group, which includes representatives from different ministries and governmental offices. The law has to be adopted by the end of 2002, and will be fundamental law for equal opportunities for men and women in all areas of life. Gender mainstreaming will also be one of the important tasks of the OEO in the future. Among endeavors for balanced participation of women and men, OEO supports the efforts of the Coalition for Enforcement of Balanced Participation of Men and Women in Political and Public Life. As part of those efforts a proposal to change Article 44 of the Constitution has been introduced to the public. The proposal introduces an addition to the Article - the law shall define measures for promotion of equal opportunities for candidacy of men and women in every elected body of authority (at both local and national levels). One of the basic measures for improving the position of women, and for establishing conditions in which women may enjoy all their rights to the same extent as men, use their full potential to participate in Slovenia's national, political, economic, social and cultural development and enjoy benefits commensurate with the contribution they make, is the integration of the gender perspective in the development of policies, programmes and legislation. To this end the

OEO has prepared a project entitled Enhancing Women's Participation in the Decision- and Policy-Making Process in Slovenia (co-financed by the United Nations Development Programme). The project was aimed, among others, at improving the understanding of gender equality, at making those who adopt decisions at all levels of government aware of the inevitability of gender mainstreaming, and at increasing the level of participation of women in political decision-making structures. As a part of the project, training for political participation of women 'Women can do it, part I' has been implemented. The training programme 'Women can do it, part II' will be implemented in 2002. Within the EU Phare-Twinning project entitled Health and Security at Work and Equal Opportunities the OEO cooperates with the German Federal Ministry of Labour. The project was launched in January 2001 and will be completed in May 2002. The equal opportunities part of the project is divided into three parts, as follows: stimulation of parents, fathers in particular, towards the balanced use of parental leave, and to stimulate fathers to use paternal leave in particular; preparation of the Equal Opportunities Law; and, stimulation of regular cooperation and communication between local and national level on equal opportunities issues. Non-governmental organizations operating in the area of violence against women are preparing a National Programme for Protection of Women against Violence and an Action Plan for Protection of Women against Violence. According to the estimation of non-governmental and governmental organizations, violence against women is an important issue in Slovenia. In the past year the OEO has cooperated with NGOs operating in the area of violence against women in particular. As part of International Days of Action against Violence against Women the OEO, NGOs and the Equal Opportunities Policy Commission at the National Assembly prepared an extensive action entitled 'What's up, girl?' which has generated a wide response in the public. The goal was to make the violence issue public, and to draw public attention to the extent of that issue. The goal has been achieved as violence against women has now become a public issue.

Status: Political participation of women: a comparison of the proportion of women elected to parliamentary seats in the National Assembly shows that in 1992 the share of elected women was 13,3%, in 1996 7,8%, and in 2000 13,3%. The share of women in local politics is similar - there were 4,8% of elected women majors in 1994, and 7% elected women majors in 1998. The share of women councilors (city and municipal councils) in 1994 was 10,6% and in 1998 11,7%. *Women's NGOs*: in Slovenia there is neither any umbrella women's NGO to represent the interests of all women nor any equal opportunities NGOs. Some of the NGOs, which operate in this area, are affiliated to the NGO Centre, which is aimed to link NGOs.

Capacity-building, Education, Training and Awareness-raising: Through its budget the OEO supports project and publications by NGOs, which operate on behalf of women or equal opportunities. In previous years the majority of funding has been spent on projects in the area of violence against women, women's health and balanced participation of men and women. In addition, the OEO publishes informative materials aimed at making the public aware of current and important issues concerning women and equal opportunities. The OEO has prepared and performed various workshops: Let's Open the Door to the Women (training, targeted at unemployed women in particular), Women can do it, part I (see above), in the future an action plan for promotion of the paternity leave will be prepared (as part of the Phare-Twinning project) and workshops for gender mainstreaming.

Information: Important sources of information are the publications of the Statistical Office of RS, the Employment Service of Slovenia, and the Health Insurance Institute. Another important source of information is the OEO's data base (available at web page http://www.uem-rs.si) as well as relevant publications and web pages of other governmental and non-governmental institutions. Research and Technologies: Research work concerning women and equal opportunities has been conducted by many experts. Research has been carried out by the Statistical Office of RS, universities, public opinion polls conducted by the Centre for Opinion Research and Mass Media at the Faculty of Social Sciences, and many individual researchers and other institutions.

Financing: No data is available for expenditure on equal opportunities and women in general.

Cooperation: One of the tasks of the OEO, listed in the decree, is representation of the government in international and regional organizations in the equal opportunities area. A leading Committee of the Council of Europe for Equality of Men and Women has been chaired by OEO' co-worker in 2000 and in 2001. The OEO plays an active role in the activities of the Stability Pact for SE Europe (Gender Task Force and Parliamentary Co-operation Task Force). The OEO is also responsible for preparation of the report and reporting itself on the implementation of the provisions of the Convention of the Elimination of All Forms of Discrimination against Women.

Children and Youth: No information available.

Indigenous People: No information available.

Non-governmental Organizations: Decision-Making: Environmental NGOs are represented by three nominated representatives to the National Committee for Sustainable Development. Other mechanisms for NGO participation in decision-making at the highest national level are: representation in the Slovenian Committee for Climate Change, representation in implementation processes of conventions (Convention on the Alps, Ramsar Convention, etc) and other international agreements, representation of NGOs in the preparation of the National Development Plan 2001-2006 (cooperation in Strategic Environmental Assessment) and cooperation of NGOs in working groups coordinated by ministries (Intersectoral Commission for Dealing with Hazardous Substances, coordinated by the Ministry of Health). Important modes to influence decision-making processes are GLOBE meetings where NGO members and Members of Parliament discuss environmental and sustainable development issues, and consultations organized by the National Council in cooperation with NGOs. NGOs play a significant role in preparation of Local Agenda 21 and Local Environmental Action Plans. Environmental Impact Assessment of projects and Strategic Environmental Assessment of plans, programmes and policies are mechanisms that enable active NGO participation but are not used to a satisfactory extent yet.

Programmes and Projects: One of the most significant NGO projects related to sustainable development was the preparation of "NGO view on the concept of future development - Agenda 21 for Slovenia," made in 1995. There have been several smaller NGO projects executed in support to sustainable development. Environmental NGOs, the Regional Environmental Center and the Ministry of Environment and Spatial Planning prepared recently the programme on NGO - MESP cooperation: Partnership for Environment. The document presents the common vision for cooperation in reaching sustainable development targets, identifies major existing obstacles for NGO operations, and defines mechanisms for enabling basic conditions for successful NGO operation and the rules for cooperation between the two sectors. The on-going project "Towards Efficient Access to Environmental Information and Public Participation in Slovenia Through the Ratification and Implementation of Aarhus Convention" provides strong support to NGO development and its integration in decision-making processes.

Status: There are around 110 active environmental and nature protection NGOs in Slovenia; among them 3/4 are associations, 10 of them are private institutions, 2 are foundations. Half of the environmental NGOs are located in Ljubljana, and the other half in other cities and the countryside. Before the independence of Slovenia in 1991, 50% of present NGOs were registered. There was a boom in establishing new environmental NGOs in 1996 and 1997, but within the last 3 years the growth of new NGOs is diminishing. It seems that the growth in the numbers of environmental actors is more or less concluded, and no major changes are expected in the actual situation and conditions. More than 60% of environmental NGOs act at the local level, but their interest to operate at the national and international level is growing. Only one third of NGOs work exclusively on environmental and nature protection fields, while the remaining 2/3 combine environment with other areas, mainly culture, tourism, sports, agriculture. If we look at NGO activities, we see that most of them (70%) work on environmental education and awareness-raising, the second most common are nature protection activities. The majorities of NGOs gather and disseminate environmental information, organize educational events, meetings, campaigns, and publicize awareness raising and educational materials. They are involved in the development of environmental policies and in different activities relating to solving environmental problems. Environmental impact assessment, independent expertise and

protesting actions are less common, even weak areas among NGO activities. Besides the lack of financial sources there are the following obstacles for successful NGO operation: lack of free or inexpensive office space and equipment; a weak NGO movement at both local and national levels, weak networking and cooperation; inappropriate recognition of the NGO role in society; inappropriate tax policies and other legal issues, especially related to the public serving status; lack of capacities for management of NGOs; conflicts with governments; lack of environmental information; weak cooperation among environmental actors; and underdeveloped NGO participation in decision-making processes. The result of these listed problems is an actual trend of weakening of the environmental NGO society. An effective policy on NGO financing and on ensuring the basic supportive conditions for NGO operation and capacity building is needed in order to raise the participative strengths of NGO society in Slovenia. Which are those basic conditions and how to approach them, was identified recently by the NGOs and representatives of the MoE and the REC, within the process of preparation of Partnership for Environment - the strategy on cooperation among environmental NGOs and the MoE.
Capacity-building, Education, Training and Awareness-raising: Capacity building and training are among weakest aspects of NGO development in Slovenia. There are few NGOs that perform support activities to the nongovernmental sector (Legal Information Center for NGOs, Slovenian Center for Non-governmental Organizations, Eco-ius, Umanotera, Institute of Ecology and some others) and the Regional Environmental Center for CEE. Some NGOs (especially nature protection NGOs) perform some qualitative education. Otherwise no special training and education for NGOs are provided.

Information: Access to information that would enable effective participation of NGOs is far from being satisfactory. On the other hand the EU approximation process and the ratification of the Aarhus Convention should lead Slovenian local and national authorities to develop legislative, institutional and practical solutions for effective access to information. Research and Technologies: In recent years no major research has been performed apart from needs assessment, NGO Directories and some statistic surveys. However, recognition of the important role of NGOs in sustainable development in Slovenian society is growing. This fact is reflected also in the growth of interest in research related to the NGO sector, especially in universities (Faculty of Social Science, Faculty of Law, Faculty of Biotechnology, etc). Financing: NGO operation in Slovenia is based on voluntary activities; only 12% of NGOs can afford a person employed halftime or fulltime for managing projects, only 20% of NGOs assessed their financial situation in 2000 as favourable for implementation of projects, 50% of them declared their situation as very bad, or bad and unstable. Among problems and obstacles for successful NGO operation insufficient financing is in the first place. The main financial sources for Environmental NGOs are membership fees and funding programmes (tenders) at the national level. Fundraising from international sources is weak, as are generating NGO incomes from services, market products and consultant activities. There are 9 major funding sources for NGOs in Slovenia: these are the EC Delegation (Phare Programmes), four ministries, three embassies, and the Regional Environmental Center for CEE.
Cooperation: The trend of cooperation among NGOs at the national and international level is growing and NGO networks/coalitions are being established on the basis of common interests (NGO Coalition for the Ratification and Implementation of Aarhus Convention, etc). NGOs also cooperate and spread sustainable development principles more and more intensively with other sectors (local communities, government, business, etc).

Local Authorities: Decision-Making: Implementation of the process of Local Agenda 21 (LA 21) is the responsibility of local authorities, with the help of the Ministry of Environment and Spatial Planning (MESP), the Ministry of Internal Affairs, the Agency of the Republic of Slovenia for Regional Development. According to the Environmental Protection Act the (city) municipalities are responsible for the preparation of local environmental protection programme; together with the regional development agency and other municipalities they could also prepare, if they so wish, regional development programme. When Slovenia gained its independence, a reform of local self-government and national administration was carried out. Priority has been given to the reorganization of the central administration, which contains an important normative component, including the Government of the Republic of Slovene Act, the Administration Act and the Organization and Competence of the Ministries Act. All of these laws were passed before the new Constitution came into force, but despite the division of authority which

exists in principle and the desire for the professionalization and modernization of the state administration they contain certain deficiencies and built-in systemic checks which make state administration inefficient. Local government is regulated by the Local Government Act. Since 1995 the previous 62 municipalities that were in a political sense an extension of state administration were subdivided into the present 192 local municipalities. Nevertheless, the process of the territorial transformation of the state administration is not completed. There still exists a tendency for further fragmentation of municipalities, besides; there is no intermediate level between a municipality and the state. This intermediate level is to be defined by the Act on Provinces. The Local Government Act brought about a new distribution of competence regarding different areas between the municipalities and the state. The new municipalities had to take care of planning at the level of municipalities, whereas the state administration became responsible for national planning as well as directing and monitoring the implementation of laws. Spatial planning is one area where municipalities have the greatest decision-making power (NEAP, 92). According to the Environment Protection Act, local communities have the opportunity to prepare and adopt their local environmental protection programmes if they so wish, and if they consider them feasible. Local communities with the status of municipality have a specific role. They are obliged to prepare and adopt their environmental protection programmes, as well as operational plans. The institutional and legal frameworks are being set up in order to provide and assure the participation of the whole population, and hence to improve their availability and functioning. Slovenia adopted the Strategy for the Economic Development of Slovenia (2001-2006) and its implementational National Development Plan (2001-2006); also National Environmental Action Programme is being adopted (1998-2003). These documents are the foundation for national planning of sustainable development in the field of economy, social life and environmental protection. However, Slovenia doesn't have a unifying strategy for supporting local authority initiatives for achieving sustainable development. In recent years a reform of public administration and local self-government has been carried out. All of these reform activities are taking place within the framework of the projects identified in the special strategy document of long-term public administration reform (the MASTER plan) and with accordance with the corresponding strategic implementation plan (1997). One of their main objectives is to carry out institutional strengthening of the administration and local self-government, as a basis for gradual enforcement of sustainable development (NEAP, 7). The state is trying to achieve greater decentralization to the level of local authorities, mainly regarding the following aspects: responsibility for the carrying out of policies, competence in decision-making, and the use of resources (i.e., human, technical and financial). The aim is to enable all those interested, but primarily local authorities, private sector, trade unions, non-governmental and local organizations, to take an active part in planning and governing dwellings and settlements. In the future, a considerably larger share of the performance itself will be taken by non-state institutions, which will be included in the networks of public services on the basis of concessions. By means of the required supplementary regulation of concession relationships, the state will assure that the public interest is protected, that all the users in public services have access to services under the same conditions, and that the required quality of services is provided. The decentralization of decision-making and participation of the public is a process that is being developed in Slovenia. After passing Agenda 21 in 1992, the activity of NGOs related to environmental protection increased in Slovenia. With their assistance and with international cooperation, programmes of environmental protection are being prepared under the supervision of the MESP. There have also been other discussions, workshops, various projects, and their presentations in connection with the development of settlements, organized by other organizations, which included a wider circle of the public. At the local level there has been strong involvement of schools in the Local Agenda 21 programmes. These programmes have also been a good opportunity for growth of new NGO's, as in the case of Slovenske Konjice, where a new NGO "Society for Sustainable Development of the Dravinja Valley" was formed as a result of their Local Agenda 21.

Programmes and Projects: The process of reform of the public administration has moved from the preparatory phase to the project implementation phase. This phase has been under way intensively since 1997 and it is centrally represented by the Office for the Organization and Development of the Administration, an organizational unit within the Ministry of Internal Affairs. Within the Phare programme – "Institutional building'," the projects restructuring and raising the efficiency of public administration are being implemented. A programme of stimulating local employment initiatives has been prepared; it promotes development of the infrastructure network

and instruments for establishment of development partnerships at the local and regional level. According to a survey conducted by a non-governmental organization SEG in 1999, there are several local municipalities in Slovenia with a completed and adopted local environmental protection programme. In addition, some cities prepared a local plan, which is more than a local environmental protection programme. The Sustainable Development Strategy for the City of Ljubljana, for example, integrates environmental, land use planning, and economic development. However, most of the municipalities are still managed by out-of-date communal plans. Several local communities started to cooperate with the newly-established regional development agencies, which are founded according to the principle of subsidiary or on the initiative of the Agency of the RS for Regional Development (1999). Some of the regional development agencies, prepared regional development or environmental protection plan for groups of municipalities (Coastal region, the region of Gorenjska, the region of Zasavje, the region of Koroška, the region of Maribor).

Status: By transferring the responsibility to municipalities, decisions have been brought closer to the people, but numerous problems also emerged. In Slovenia, municipalities in general have inadequate organization, finance and staff structure, to handle all of the matters for which they are competent. Municipal policy is generally restricted to the construction of local (public utility) infrastructure, and on issues that are most important for their inhabitants (water, energy, accessibility) (NEAP, 92-93). Therefore, a demand for integration and connection of the development interests of municipalities into wider local municipalities has become common. Reasons why Slovenian municipalities have not been stepped into the process of LA 21 as much as in some European countries, are: local administrations have been very busy with their own reorganization in recent years; there is a lack of knowledge what LA 21 is about; there is no a protagonist who would constantly direct and enforce the idea; there is no external pressure (by the law or EU); also a weak organization and staff structure of local administration is a problem. In Slovenia there is not one central body, which would connect the national and local administration, harmonies and coordinate their policy, provide information's etc. For certain areas local administrations are responsible to specific Ministries. For the LA 21 project, the MESP and the Agency of the RS for Regional Development have the most direct connections. This year a national coordinator for LA 21 was appointed. But practically speaking, there is no a group of people who would be regularly occupied with the LA 21 project. Nevertheless, some municipalities cooperate among themselves in the area of development planning, spatial management and management of utilities. In Slovenia, there are also two associations of local authorities and several newly-established regional development agencies; their task is to encourage cooperation among the municipalities, namely exchanging experiences and information's among them.

Capacity-building, Education, Training and Awareness-raising: The transparency and accountability of the local (city) governance in Slovenia has significantly been improved since 1995 as a result of: democratic, economic and institutional reforms in Slovenia; local administrative reforms since 1994 and, establishment of the city municipalities (11) with directly elected mayors and local councils; and, the establishment of professional city departments responsible for management, planning and development in cooperation with other public/private institutions, professionals, and civil society (I, 91). On the other hand, the administrative apparatus is not clearly formed, its competencies are not fully stated, and land use planning and administration are poorly connected between the state and the municipal levels in terms of organization and intersectoral communication. With regard to development, there is a lack of a key intermediate regional level in which the coordination of interests of local communities and the state would be implemented (I, 28). In 1993, there were 5,6 local government employees per 1000 population (H2, 65). Umanotera, Slovenia's Foundation for Sustainable Development has been the major promoter of the LA 21 project with seminars, workshops and publications that were organized to promote LA 21 and build capacity for local environmental action planning.

Information: Promotion of national planning documents is carried out, among other means, via Internet (i.e., home page of the Government of the Republic of Slovenia) (I). Local authorities have been preparing bulletins, environmental and other reports; some of them also have their own home page. MESP and some local authorities carry out environmental monitoring and maintain an environmental information system (R). Information is also

disseminated with the help of schools, in particular eco-schools and other schools with active environmental programmes. Local media, e.g. newspapers and radio stations, have been used to communicate environmental information to the public. Access to information on the state of the environment could be dangerous, owing to the poor quality of available information. There are two main challenges. The first is limited public access to the existing information, which should be improved with the ratification of the Aarhus convention. A more serious challenge is the absence of important data, e.g. on air and water pollution, in local communities, because the implementation of comprehensive monitoring systems imposes high costs on local communities (F).

Research and Technologies: The local plans, which are already prepared for some municipalities, include the results of the work of experts, which have been done in cooperation with public institutions and other experts; these studies also discuss sustainable planning and management of local communities.

Financing: Local Agenda 21 programmes are generally financed from municipality and private contributions, which usually are provided in the form of a dedicated project for Local Agenda, voluntary work of motivated individuals and contributions from sponsors (F).

Cooperation: International cooperation at the city level in the 1990s was constrained owing to local government and administrative reforms. International cooperation at the country and city level includes several forms of commitment to sustainable development, such as the synergy between the recommendations of Local Agenda 21 and the UN Habitat Agenda. Some municipalities are taking active part in international links and city networks and/or associations of local authorities (like Eurocities, Working Community of Alpine Towns, Cities Forum, European Council Standing Committee of Local and Regional Authorities, European Cultural Cities, Entente Florale etc.) or bilateral city partnerships most notably with cross-border cities in Austria, Italy, Hungary and Croatia. Since 1995 Maribor and Koper are also taking an active role in EU programmes (i.e., Phare CBS, Ecos-Ouverture, etc.) with the aim to improve city sustainability, tourist activities, alternative modes of transport, quality of services, and international profiles. The most significant effects of the internationalization of cities could be found in the development of trade and FDI activities, congress tourism, expansion of business and financial services, and participation in international projects (I, 94).

Workers and Trade Unions: Decision-Making: The Ministry of Labour, Family and Social Affairs is responsible for workers and Unions matters. Some responsibilities fall under the competence of Ministry of Health. Under the Ministry of Labour, Family and Social Affairs two offices directly work on the issue: the Labour Inspectorate and the Office for Health and Safety at Work. The Labour Inspectorate monitors the implementation and enforcement of legislation related to status, rights and obligations of workers. The role of inspectors is mainly advisory. The Office for Health and Safety at Work, established in 1995, consists of three units. The main responsibility of the Office is the preparation of an expert basis for the direction of national policy in the area of health and safety at work such as for example the National Programme for Health and Safety at Work. In 2000 the Government appointed a Council for Health and Safety at Work as an expert advisory body to the Government. There are 15 members of the Council: 3 representatives of the government, 2 representatives of the university, 2 representatives of the association of experts, 4 representatives of employers and 4 representatives of unions. The composition of the Council should assure that all stakeholders are able to express their opinion about the relevant documents. The first meeting of Council has not been held yet. An Intersectoral Committee for Sound Management of Chemicals was set up by the Ministry of Health. The general tasks of the Committee are: to coordinate the work of sectors responsible for dangerous substances; to draw up a national profile on the management of dangerous substances (assessments of the situation); to draw up a national action programme for chemical safety and cooperation within an international pilot project; to draft a Dangerous Substances Act which will also include the legal basis for good laboratory practice. The Chamber for Health and Safety at Work was set up to improve collaboration between safety engineers, medical specialists and other experts working in this area. The Law on Safety and Health at Work entered into force in July 1999. It is the framework law and brings about the general principles for health and safe at work at the level of a company. It also defines the employer's responsibilities. A two years transitional period

was given to employers to implement the safety requirements in their organization. The new law with all 17 sub-regulations should be enforced by July 2001. Owing to the complexity of the matter an additional transitional period of half a year was granted for the business sector (until 31. December 2001) and for farmers and other self employed individuals until 31. December of 2002. This Law originates from two conventions from the International Labour Organization (Conventions ILO no. 155 and no. 161). The framework EU Directive 89/391/EEC is the third piece of legislation, which served as a basis in preparation of the Slovenian Law on Safety and Health at Work. In addition to the Law on Safety and Health at Work and Law of Labour Inspection, additional laws and regulations are in place and some are still being drafted. The Strategy of Economic Development of the Republic of Slovenia includes both economic and environment components, and also the social dimension of development. This strategic document serves as a basis for development of sectoral development documents. The basic goals in the area of social development are to ensure stable social security and to enable and promote social inclusion. The basis of social development was determined by acceptance of national school programmes, employment, health, housing, social care programmes, policies how to resolve poverty and social exclusion, reform of retirement and disablement insurance, the strategy of employment and the programme of resolving unemployment. The framework law requires an involvement of major stakeholders. As indicated in the sections above, national government, employers, unions, workers are indeed involved in the decision making process.

Programmes and Projects: The Government, in collaboration with the expert community, employers and unions, is currently preparing the National Programme for Health and Safety at Work. The document will set the strategy for the development of this area. According to the Law on Health and Safety at Work (when it is in place) the employer will need to provide the identification of safety and risk assessment for all work places and prepare a written statement of the dangers. This statement falls under the set of measures, which aim to reduce risk and the incidence of injuries and disease. Several programmes have been adopted to accommodate changes that have negative social consequences. The closure of the Mežica lead and zinc mine, Idria mercury mine, uranium mine in Žirovski vrh are the causes of many economical and social problems. For example, the system of special conditions for the retirement of workers who work with asbestos was adopted to compensate for negative consequences arising from the requirement of the Asbestos Convention, which was ratified by Slovenia in the year 2000. In the year 2000 a Twinning project: Health and Safety at Work was launched. Two partner countries (Germany and The Netherlands) are helping Slovenia with the transfer and enforcement of the legislation. The project aims at improving administrative and institutional capacity in the area of health and safety at work. In years 1999 - 2000 a Phare project Development of a Health and Safety at Work System in Slovenia was implemented. Within this programme an analysis of the situation and the level of the legislation implementation were prepared. The Slovenian enterprises assess their performance in compliance with ISO 9000 and ISO 14001 standards. These standards consider also the safety and health at work but in most cases they were neglected. All three licensing organizations (SIQ, BVQI, TUV) issue certificates of health and safety at work. The OHSAS 18001 standard (Occupational health and safety management system), which is a specific system for management of health and safety at work, has been obtained only by 4 companies. One assessment of these issues was done according to SA 8800 (Social Accountability system 8800).

Status: Slovenia is in transition from one to another political system. This transition creates changes in fundamental societal values. This manifests itself in ensuring a clean, safe and healthy environment. The Law on Health and Safety at Work regulates all these, but to improve the current status, significant investment is required together with a change in the values and the mentality of public. For this, time is necessary.

Capacity-building, Education, Training and Awareness-raising: The Law on Health and Safety at Work requires mandatory education regarding health and safety at work. The educational programmes need to become a part of the general curricula as well as the curricula in the vocational programmes at all educational levels. They should also be a mandatory part of the introduction to the workplace. However no sanctions are predicted in the law if this requirement is breached. Employer is also responsible for informing the workers in time about any dangers at work and the measures, which aim to protect them from, harm. Educational programmes about health and safety at work

are part of the educational programmes offered by the Institute for Technical Education. A special programme is run by the Educational Centre Miklošiè on acquiring basic knowledge for training personnel on safety at work issues. The Adult Education Centre of Slovenia has set up a programme for those who want to obtain the required skills for the training of workers for safety at work. The Institute for Safety at Work and Environment Maribor (in collaboration with the University of Maribor and the Education Faculty) is carrying on a basic adult education programme. The Centre for Technological Education at the Chamber of Commerce and Industry will also start carrying out a programme for training of trainers for health and safety and fire security personnel in the companies and institutions. A study programme for safety engineers is being taught at the Faculty of Chemistry and Chemical Engineering.

Information: The Institute of Public Health of the Republic of Slovenia is responsible for health statistics, which include data on safety at work. The Web page of The Office for Health and Safety at Work provides access to the data on injuries at work. Both sets of data are collected according to the Eurostat requirements. Important source of information are also other relevant web pages as well as printed media.

Research and Technologies: Since 2000 the Adult Education Centre in cooperation with British organization Investors in People have been working together in a research project Investors in People. 15 Slovenian organizations and companies are included in the project and hope to gain the standard Investors in People at the end of the project. It is about stimulating development and to establishing quality measures in the area of human resources. In 1999 the Governmental Office for European Affairs and the Institute for Economic Research worked together on research: Economic analysis of effectiveness of harmonization of Slovenian enterprises to European directives of health and safety at work. The purpose of the research is to establish how much time enterprises will need to implement those directives (approximately 33 directives) and to find out the economic costs of the implementation. The research shows that 75% of all enterprises involved in the research will face extra costs due to harmonization with the implementation of the EU directive no. 867188 (noise at workplace) and 25 % of all will have to invest to improve chemical safety. Until the end of the transition period (year 2005) 81% of enterprises will adjust their technological processes to the EU directives on chemical safety. According to the research, the estimated costs for the implementation of directives will be about 400 million DEM. The coalitions of associations of safe engineers and technicians in Slovenia have established a Foundation Avgusta Kuharja, which gives awards for special professional achievement.

Financing: Financing of the Office for Health and Safety at Work and the Council for Health and Safety at Work and other governmental bodies is provided from the state budget. The companies need to invest their own financial resources to ensure health and safety at work. The Unions finance themselves from their membership fees and also from their own income. They also use Phare financial support.

Cooperation: The competent ministry is responsible for bilateral cooperation with relevant ministries from the other countries. It also collaborates with the international associations such as the Council of Europe, International Labour Organization, and UN. Slovene Unions are member organizations of ILO, European Confederation of Unions, and European branch trade union, ICFT. The medicine specialists participate at the meetings of the Union of European Medicine Specialists and European Accreditation Council for Continuing Medical Education.

Business and Industry: Decision-Making: The goal of the Ministry of Economy is to increase the competitiveness of the Slovene economy (http://www.sigov.si/mg/index.html). Within the ministry there are three departments: for development of the entrepreneur sector and competitiveness; industrial projects; international economic relations. The Chamber of Commerce and Industry (http://www.gzs.si/) also aims to establish beneficial conditions for the operation of industry and to increase its competitiveness. The Agency of the Republic of Slovenia for the economic promotion of Slovenia and foreign investment (http://www.sigov.si/tipo/slo/) was set up in 1994. Its purpose is to encourage foreign direct investments and exports. The National Metrology Institute (http://www.usm.mzt.si/), which works within the Ministry for Education, Science and Sport (http://www.mss.edus.si/) establishes and

manages the national metrology system of Slovenia. It ensures international comparability and ensures health, environmental protection and general technical safety. In the year 1995 a Slovenian Technical Committee USM/TC UZO for Environmental Management was set up. It is responsible for the preparation of Slovenian national standards within the field of environmental management. As an observer it participates at the Technical Committee ISO/TC 207. There are 20 national standards in the area of systems of environmental management. Three licensing organizations (BVQI, SIQ, TUV) issue ISO 14001 certificate. SIQ has been a full member of the International Network IQNet since 1992. Slovenia creates a supportive environment for the faster development of Small and Medium sized Enterprises through the following expert institutions: the Public Fund of the RS for the Development of SMEs (http://www.jsmg-sklad.si/), the Incubator for Small Enterprises (http://www.pcmg.si/) which was established with the purpose of organizing and management of the incubator network for small enterprises. In the year 2000 four regional incubator centres had been established which take care of the encouragement of small enterprises at the regional level. This area has been regulated by a number of laws and sub-laws, which consist of provisions which are directly related to environmental protection. The Law on the Support of Enterprises helps the companies also to develop new technologies and to establish and operate research units in the period 2000 - 2003. The area of industrial pollution and risks is the most extensive part of the environmental legislation and it includes almost all areas of environmental protection. The Environmental Protection Law (1993) requires that the company has to appoint a responsible person for environmental protection who has been trained/educated in the area of environmental protection. In 1993 Slovenia signed a Business Charter for Sustainable Development, which consists of 16 starting points for the introduction of the systems for the environmental protection. Slovenia has also transposed into national legislation EU directives on the monitoring and prevention of industrial pollution (IPPC, Seveso, VOC directives). In Slovenia, there are 120 identified companies which will have to comply with the IPPC directive (19 % of the companies are already in compliance with the requirements of the Directive, 86 % will comply with these requirements by the 2007 and 14 % by the end of 2011), 640 companies have to comply with the VOC directive and 50 with the Seveso. The foundations of the economic policy are to provide an environment, which would encourage the growth and competitiveness of business. Global competitors base their activities on relatively high standards regarding environmental protection. In an export-oriented business the environmental aspects of the company's activities are gaining in importance. They are forced to do this by international competitiveness. The Strategy for economic Development of Slovenia (2001) and the National Development Programme (2001 - 2006) contain elements of environmental protection, which should be addressed by the industry sector. In 1996 the first Strategy of SME and Entrepreneurship was adopted and the new strategy has been adopted for the period 2001 - 2005. To implement the goals of this strategic document a suitable organizational network needs to be set up (business infrastructure, technological parks, chambers of commerce and craft, local business centres, regional development agencies). In addition to the national government, which represents a wider social interest, scientists and researchers, representatives of business world, industry, business, unions also participate in decision-making.

Programmes and Projects: At the Ministry of Economy several programmes for improvement of competitiveness are being carried out: the programme for encouragement of entrepreneurship; the programme for increased competitive ability of the economy; the programme for adjusting Slovene textile, clothing, leather and shoes industry; the programme of measures for better business investment in the technological development and strengthening the development capacity of the companies; projects for development of products and services; the programme for restructuring of business and industry sectors (steel industry, brown coal, operational programmes for closing down of the Mežica mine, and preventing the consequences of lead mining in Idrija). As a part of a global initiative, the Association of Chemical and Rubber Industries began to implement its Responsible Care Programme, a voluntary commitment from the chemical industry to constantly improve its safety, health and environmental performance. The number of companies committed to the programme grows year by year. The companies implementing the programme cover at the moment about 60 % of the total chemical industry turnover. The right for the use of the logo Responsible care has so far been awarded to three companies. The Ministry of Economy offers financial assistance to those companies, which want to obtain the ISO 14000 certificate. In the year 2000, 64 companies obtained this certificate, which is a 50 % increase compared with 1999. In the middle of the

year 2001 in Slovenia 127 companies had the ISO 14001 certificate. Those companies also practice ecological accounting (which is included in the Environmental Protection Act but it is not enforced). A National Eco-labelling system is not yet in place although the legal foundations for this are set in the Environmental Protection Act. Some companies, which export, have obtained foreign eco-labels (Blue angel). After two unsuccessful attempts in the years 1994 and 1995, the Cleaner Production Project was launched for the third time in the year 2001. The project is carried out by the Institute for Chemistry (http://www.ki.si/), a consulting company Liveo (http://www.liveo.si/) and Austrian Stenum and supported by the Chamber of Commerce and Industry, the Ministry of Economy, the Ministry of Environment and Spatial Planning (http://www.sigov.si/mop/) and the Eco-fund (www.ekosklad.si). The aim of the project is to help companies with the introduction of environmentally sounder technologies in their existing production processes. Since 1997 a journal Gospodarski Vestnik (http://www.gvrevija.com/) has organized a biannual competition where they gave awards in two distinct categories (environmentally friendly product and energy efficient company). In 2001 they launched a new category of environmentally friendly company and four companies are bidding for the award this year. A trial project System of Management from the view point of the environment was launched in 1994 by the Slovenian Institute for Quality (http://www.siq.si/) with the support of the Chamber of Commerce and Industry and the Consumers' Association of Slovenia (http://www.zps-zveza.si/). A project to stimulate the introduction of an integral system of constant improvement in companies is in place, which aims to increase the overall competitiveness of Slovenian industry. This should be done through transfer of successful international approaches and tools for the introduction of the systems for constant improvement and implementation in the selected companies. Its period is 2000-2003 and 60 companies are participating in this programme which is run by Deloitte&Touche d.o.o. (http://www.deloittece.com/). Many projects whose aim was to increase the competitiveness of SMEs and where the environmental protection aspects are incorporated (TAM programme (TurnAround Management Programme), BAS programme (Business Advisory Services), a project for improved competitiveness of the machine-manufacturing and tool-manufacturing industries, technological parks, Stability Pact for SE Europe).

Status: In the year 2000 a Centre for Cleaner Production has been set up but it does not have financial means for operation. Part of the finances for its operation was offered by the UNIDO, the rest should come from the state budget but the Government has not fulfilled its obligations. As a Small country Slovenia can develop only as an open economy. Integration of environmental aspects in the management of companies is being more intensive where the companies are export oriented. In the past within the country big structural changes took place (transition to market economy and transfer from big companies to SMEs). The business environment for SMEs in Slovenia is not very favorable (inefficient public administration, underdeveloped entrepreneur network). The compliance with the international environmental standards poses a high burden on SMEs. Environmental protection is still not considered from the integral perspective and is seen as a technological problem not as a need for a change in the management, strategy and policy of companies. A big deficiency in Slovenia is the lack (underdevelopment) of the economic instruments for environmental protection. At the moment only CO2 and wastewater tax are enforced. A tax on waste disposal will be enacted in January 2002.

Capacity-building, Education, Training and Awareness-raising: Education has been practiced in formal (university curricula) and informal education in the form of workshops, seminars, training, etc. A new reform of the vocational education is based on the Law on Vocational and Professional Education, which was adopted in 1996. A dual system was established as a pilot system in 1997 supported by the Phare Programme. The same programme also supports the project to establish indicators of the quality of the practical apprentice education, which aims to improve this type of education and to acquire the instruments/indicators for the assessment of its quality. The Voucher system offers advisory, information, education, training to the existing companies and those, which are in the process of being set up. Educational programmes about environmental management systems, cleaner technologies, IPPC Directive are some of the educational programmes offered by the Institute for Technical Education, the Chamber of Commerce and Industry and other organizations.

Information: Databases of different industries branches are available at the ministries. The Agency for Environmental Protection (http://www.sigov.si/uvn/) collects data and information related to industrial pollution and the use of natural resources. Other forms of information dissemination about the developments are carried out through the media, yearly reports, etc. Euro Info Centres offer a range of useful information to the companies.

Research and Technologies: In the year 1997 the European Commission funded a project FEMIRC Slovenia that in collaboration with the Ministry of Education, Science and Sport and contact persons for 5th Framework Programme of EU launched a successful campaign for 5th Framework Programme (research and technology programme of the EU). In the year 2000 FEMIRC was renamed as the Innovation Relay Centre. The task of this Centre is transnational technology transfer and the promotion of innovations, which might help industry, SMEs. Half of the funding for the project is provided by the EU and half from the State budget (Ministry of Education, Science and Sport). Partners to the project are Institute Jozef Stefan (http://www.ijs./ijs-slo.html), Maribor University and Institute for Chemistry. The project will finish in 2004.

Financing: As mentioned, the Ministry of Economy supports companies that are obtaining the ISO 14000 certificate. It also supports applications for international project (Cleaner Production with Austria, BAT Clearing-House for IPPC, 5th framework Programme). It co-finances the projects of technological updating for example in the textile, leather and wood processing branches. The Eco-fund provides favourable loans to business to facilitate the transfer of EST (the call for proposals focuses on two broad areas: environmentally sound technologies and products and on devices and technologies for environmental protection). In collaboration with the Phare programme the Eco-fund has run an Environmental Credit Scheme since 1998. In the year 2000 the Public Fund for the Development of Small Enterprise was set up which provides favourable loans, guarantees, or subsidies. Other international banks like EBRD, IBRD, EIB support various projects with loans. Other sources of funding are the Global Environmental Facility trust fund and the European Investments Fund. Slovenia participates already in the Eureka programme. The Ministry of Economy gives subsidies of up to 25 % of the whole project value to any organization, which participates in the Eureka programmes.

Cooperation: The Ministry for Environment and Spatial Planning is the state focal point for the European Environmental Agency and EIONET network (European Environment Information and Observation Network). Slovenia has already participated for 7 years in the Eureka programme and it is more often recognized as an initiator and coordinator of new projects. The BESTAS network is a group of 9 institutions in 9 European states, including Slovenia. This network offers a database with the data about SMEs and is funded by the European Commission within the programme Promotion of Innovation and Supporting, the collaboration between SMEs. In 1993 the Institute for Ecological Management DREVO (which does not exist any more) became an associate member of International network for Ecological Management (INEM). Slovenia is a member of the World Trade organization (WTO), the International Standard Organization (ISO) and cooperates with following organizations IEC, OIML, CEN, CENELEC. Companies collaborate in European and international projects JOG, PHARE (PHARE-SME, PHARE CBC), CRAFT (Cooperative research action for technology), EFTA, SIDE 3, COOPME, Leader II, Employment now, BIC, EIC Network, OECD, ECE, UNCTAD, ITC, ISPA (Instrument for Structural Policies for Pre-accession), Life III, DISAE (Development of Implementation Strategies for Approximation in Environment), REAP (Regional Environmental Accession Projects).

Scientific and Technological Community: Decision-Making: The Ministry of Education, Science and Sport is responsible for the scientific policy, the Ministry of Economy for the policy of technological development. The Ministry of Education, Science and Sport, Office of Science in accordance to the Governmental Law, is responsible for matters which are related to science, such as: financing research projects and programmes; capacity building and post-graduate studies for junior scientists; programme Science for Youth movement and promotion of science; assuring the infrastructure for science; scientific publication activity; the system of scientific information and communication; information science for science needs; and, international scientific cooperation. Under the Ministry of Education, Science and Technology works the Expert system. It consists of several bodies such as the National

scientific-research body, Scientific-research counsels, Expert counsel for technological research, Scientific-research council on the area of nature and culture of Slovenia and the Slovenian people. It decides which projects should be included in the National Research Programme. Beside the competent ministers, expert systems and governmental laws cooperate in the process of developing the R&D and technological policy the representatives of science-research area, business sector and other organizations and the representatives of wider interested public. The Sector for Technological Development and Innovations, which operates as a body of the Ministry of Economy, stimulates research infrastructure, technological capabilities of products and services, stimulates business investments into technological development, strengthens the progress capabilities of enterprises, includes Slovenian industry into international R&D and technological programmes, and continually follows development in the fields of R&D and technology. The government has established a professional advisory body Council for Science and Technology, whose priority task is preparation of the starting points and directions for the National Research Programme and monitors its fulfillment. Its task is also to monitor general developments in the field of research in Slovenia. The most important law, which regulates this area, is the Law on Research Activities, entered in force in the year 1991. In the preparation stage is new law, which should be accepted in the first half of the year. It defines the activities of scientists, research institutes and others professional bodies, it defines the way of financing, and the conditions for operation of public services on the basis of the concessions, and determines the mandatory preparation of the National Research Programme and the National Programme of Technological Research. Many sub-laws specify its provisions in more details. In addition to this law many other relevant laws and sub-laws are in place. Of particular importance is the Act on the support to enterprises in the development of new technologies and establishing and operation of their research units in the period 2000 - 2003. In Slovenia there is no unified scientific and technological codex but many ethical codices in different fields. Slovenia has ratified the Convention of Protection of Human Rights with Bio-medicine. Slovenia is a member of a working group to develop protocols for bio/medical research on human beings. In the process of preparation is a law concerning experiments on animals, which should among others define the ethic of research on animals.

Programmes and Projects: The draft of the National Development Programme 2001-2006 was approved in December 2001. It is based on the Strategy of Economic Development of Slovenia. It is a long-term activity programme implementing the Strategy of Economic development, which includes the research priorities of the state, and programmes and sub-programmes in the fields of technological development. The National Development Programme defines the uniform strategy of the state including the strategy for scientific and technological development. The Government Technological policy in general includes instruments whose aim is to encourage technological development among enterprises. More specifically, it encourages development of domestic science and technology in the fields of basic, applied, developmental research. The parliament and government are responsible for development of broader technological science; the sectoral ministries are responsible for development of short term policies. Priority tasks at this area are: to balance financing between research programmes and projects as well as between the basic and applied research and progress; to stimulate targeted research programmes which would contribute towards the strategic progress of the country; to provide more funding for the qualification of junior scientists and to foster their connection with the business sector; to modernize research infrastructure; and, to foster international bilateral and multilateral scientific cooperation. The National Research Programme is a constituent part of the National Development Strategy and other governmental policies. The new National Research Programme 2006 is in preparation and will be based on both of the strategic documents mentioned above. This new NRP will also take into consideration the integration of Slovenia into the European Research Area (ERA). Measures for evaluation of projects and programmes of the Ministry of Education, Science and Sport are defined by the Book of rules of conditions and methodology of selection and financing basic and applied research work and progress. The book of rules to encourage technological progress defines the procedure, form, shape, criteria for gaining these resources. The competent Ministry gives resources to encourage technological development on the basis of the Programme to Encourage Technological Development in Slovenia, which is approved within the scientific and technological policy. Programme financing is carried out since 1999, for period of 5 years (until 2004). It includes 324 programme-research groups. There is a tendency of lower the programme financing in favour of project financing. The ministry favours the projects on the areas such as basic

and applied research, Young researchers training programmes, Infrastructural activity and research equipment, Goal-oriented research programmes. Since December 1994 the Ministry of Education, Science and Sport together with Ministry for Environment and Spatial Planning carried out the Goal-oriented research programme protection the environment. The active role in this programme has beside the Ministry for Environment and Spatial Planning the department such as energy, agriculture, forest, tourism. There are many programmes and projects for popularizing of science. The House of Experiments is a centre, which exhibits hands-on experiments. It cooperates with schools, business organizations and with similar organization around the world.

Status: There are 18 the most important leading scientific/research institutions in addition to both Universities: Jožef Stefan Institute, Scientific Research Centre of the Slovenian Academy of Sciences and Arts, National Institute of Chemistry, National Institute of Biology, National Institute for Geology, Institute for economic Research, Agricultural Institute of Slovenia, Slovenian Forestry Institute, Institute of Geography, Institute of Metals and Technology, Institute for Ethnic Studies, Institute for Contemporary History, Educational research Institute, Urban Planning Institute of the Republic of Slovenia, Slovene National Building and Civil Engineering Institute, Institute for Hydraulic Research, Science and Research Centre of the RS, Koper, Primorje Institute of Natural and Technical Sciences, Koper. The staffs of these institutions collaborate in many projects, which include the components of environment protection, development of new processes for cleaning waste water, waste management, recycling, and clean production. The Slovenian Science Foundation was established in 1994 as an independent and autonomous institution whose purpose is to provide promotion and support for the development of science in Slovenia. It contributes to formation and realization of scientific policies, which are in accordance with the National Research Programme. Slovenian scientific and research activity is relatively well developed. According to the international criteria in some scientific areas they reach the top-level (biochemistry, physics, biology, chemistry, pharmacy, mathematics, materials). But collaboration (flow and use of knowledge) between science and business is very low. Dialogue and relationships between government, business and academic sphere are not well developed. The ratio between basic and applied research projects is 60:40 %. The ratio between basic and applied research programmes in the year 2000 was 72:28 %. Nevertheless a trend is towards more applied studies which as a result lead towards the improvement of technology, products and services. The competitiveness of Slovenian research depends not only on the quality of the human resources but also on the presence of suitable infrastructure. In many cases this is the obstacle especially when compared with developed countries. However, no serious brain drain can be observed in Slovenia at the moment.

Capacity-building, Education, Training and Awareness-raising: Capacity building and education are carried out through formal and informal programmes. Formal programmes are held as graduate and post-graduate studies at both universities. In the year 1995 the Gorica Polytechnic (Faculty of Environmental science) was established as the first international post-graduate school in Slovenia. In 1985 a very successful programme on education of young researchers was launched. The programme helps young researchers to develop and it also promotes the cooperation between the science and industry sectors. In addition to their basic activities the research institutes in Slovenia carry out different education and capacity building programmes. They also organize conferences, fairs and workshops. More education and training needs to focus on improving the capacity of the research institutions to market their achievements.

Information: The research organizations have to prepare annual reports of their activities for the Ministry of Education, Science and Sports They are also obliged to prepare work programmes for the following year. Data are collected for the statistical reporting on research activities. These data are also used by different state bodies such as the Ministry for Environment and Spatial Planning and the Institute for Macroeconomic Analysis and Development. Data and information are publicly available. Information on the work of the scientific institutions is also provided via open days, which aim at informing the wider public. Institution web pages are also becoming more and more important sources of information. For the purpose of the domestic and foreign knowledge and information there will be continuing work to maintain and wider develop the national information-communication network ARNES and to improve and encourage wider usage of the information systems COBISS and SICRIS.

Research and Technologies: The research activities are going on the fields: processes of atmosphere and air quality, water quality, soil and under-water quality, waste management, environment and human health, social point of view of environment, cultural and natural landscape. The programme Young Researchers has been operating since 1985. It is one of the most successful initiatives for strengthening young specialists. It settles approximately 250 new young researchers annually. 4351 young researchers have been included in the programme until now. The programme includes the possibility of education abroad. After some years of performance of this programme we found out the weakness of the programme, which is that it does not stimulate these people for employment in business. The aim of the Project Intelligent Region is to establish the connection of research results with practice and to establish the capacity of the regions for economic progress. The programme Technological Clusters connects enterprises, educational organizations, and local authorities to enable them to share technological and management knowledge and experience.

Financing: The data show that in Slovenia investment in science and research is low. State budget funding is decreasing every year and in the year 2001 it accounted for 1,5 % GDP. On the other hand funding from other sources such as industrial investment and international funding institutions is increasing. At the beginning of the independence state budget and private investments were almost equal (0,7 % : 0,8 %). This ratio had changed by the end of the last decade (0,56 % : 0,86 %). The tax system needs to be improved in the future in order to stimulate private investment into research. A certain level of financial stability for science and research is provided by the Ministry of Education, Science and Sports, which finances national research programmes and also co-finances international projects in which Slovene researchers participate. Ministry finances administrative costs of national institutes and programmes and projects. More than 80 % of the budget is intended for the programme financing of national research institutions, of which as much as 72 % is allocated to the sphere of basic research. It is necessary to achieve completely different shares, more for project financing and more for applied research work. EU funds, other European funds and some UN programmes are very important financial resources. Very important financial source are also international financial institutions like WB, EBRD and EIB.

Cooperation: Co-operation occurs among institutes at home and with institutes abroad, and is mainly on projects. There is no interdisciplinary cooperation, but we can see some attempts in this direction. Co-operation inside Slovenia is stimulated by KORIS (Co-ordination of Research Institutes in Slovenia), Technological exchange, International Centre for Sustainable Development, Association of Researchers in Slovenia. Slovenia is one of nine countries which are connected in the network BESTAS. The Ministry participates in bilateral and multilateral cooperation. Bilateral cooperation is with more than 70 countries worldwide (Croatia, France, Germany, USA, Great Britain, Italy, etc.). Intergovernmental cooperation is taking place within the framework of umbrella agreements, which Slovenia has concluded with 39 countries. In the multilateral field the RS has developed an extensive cooperation with individual European research programmes running within the EU, with other independent European programmes and with the programmes from the UNO system. Slovenia has been cooperating on equal terms in several programmes of the EU (partly in the 3rd Framework Programme, 4th FP, 5th FP, INCOCOPERNICUS, COST, TEMPUS, ACE). In 1994, Slovenia became a full member country of the EUREKA initiative. Since 1996, Slovenian organizations can also join the activities within the scientific programme of NATO (Science for Piece). Since 1999 the Slovenia has been actively collaborating in the activities of the programme Stability Pact for South-East Europe. Considering international organizations, the most important cooperation for Slovenia is with the UN development programme (UNDP) and with individual specialized agencies of UNO (UNIDO, FAO, WHO, UNESCO).

Farmers: Decision-Making: *National agricultural policy*: Slovenia's economic policy has been shaped by the preparation for entry into the EU. The Programme of Agricultural Policy Reform (1999-2002) serves as a framework for the harmonization of EU and domestic policies, and the gradual reduction of trade protection and price regulation. The programme of agricultural policy reform 1999-2002 also includes the agricultural-environment programme, which focuses in environmentally more friendly agricultural production and direct

payments for environmental more friendly techniques. The Organic Farming and Processing Regulation was accepted in April 2001. Farmers are still waiting for the Regulation on Supplementary Farm Activities, so at the moment it is not possible to register it. Also see under **Status**.

Programmes and Projects: The Programme of Integrated Rural Development and Village Renovation (CRPOV), Phare CBC Programme, Phare Small project Programme, education EU programmes like Leonardo da Vinci Programme, Socrates, SAPARD-Pre-accession help for agriculture. The most important from the view of promoting nature conservation and sustainable farming practices is SKOP (Slovenian Agricultural-environment Programme), implemented as part of the Agricultural Policy Reform Programme (1999-2002), and accepted in April 2001 with direct payments for 22 different measures for more sustainable farming techniques, nature preservation, water and soil protection, safeguarding of protected areas, education and promotion. Regarding different programmes for farmers' movements, each of this group is very active in daily problems and actions considering agriculture and rural development. Also education is a very important, highly supported part of the movement.

Status: In formulation and implementation of sustainable development policies and regulations a number of NGOs (chamber, rural women, organic farmers, syndicate, etc.) have been involved, but there was usually not enough time for comments and remarks, so they were not completely satisfied with the outputs. This was particularly true during the creation and formation of SKOP (Slovenian Agricultural-environment Programme), where the NGOs were only involved in the presentation of conclusions There was not enough time for comments, and the only proposals taken in to consideration were those of DOPPS (Bird Life of Slovenia). A similar situation happened during the creation of a trade mark for more environment friendly products. The Union of Rural Youth was particularly disappointed, because they haven't been even invited of each of the cooperation and presentations. On the future and present protected areas local and governmental authorities are trying to involve the rural population in protected area formulation and restrictions. Because of conflicting interests, farmers are afraid of restrictions in future protected areas. The number of farmers is continuing to decrease and today Slovenia has around 70.000 farmers. Several NGOs have been established connecting the rural population and covering agricultural and rural development activities: Chamber of Agricultural Forestry (established in April 2000, 170.000 members - all farmers and land owners, agricultural companies and agricultural co-operatives); Union of Slovenian Rural Youth (established in 1993, 54 regional associations, over 3500 young rural people); Slovenian Countrywomen Union (established in August 1995, 130 associations, 80 are members of the Union); Union of Slovenian Organic Farmers Associations (established in June 1999 regional associations, 600 farmers); Association of Agricultural and Forestry Students (around 100 member students); Co-operative Union of Slovenia (established in July 1972, 110 member co-operatives (together more than 23000 members), 105 of them are agricultural and forestry co-operatives); Syndicate of Slovenian Farmers (established in 1992, 9 regional branches, around 4000 members (mostly farmers and others); Unions of Animal Breeders (Union of cattle (70 associations), pig (8 associations) and sheep/goats breeders); Association of agro-tourist farms (established in November 1997, 270 tourist farms).

Capacity-building, Education, Training and Awareness-raising: In Slovenia there are 2 Agricultural Universities, the Veterinary University and several high schools for agriculture educating young people. The number of students especially in high schools is decreasing, but there are more people deciding to go to the University. Universities are sometimes taking part in the education of extension service workers, usually in the project concept. Every year the Extension Service is performing different training courses for farmers: plant production (organic farming in the last 2 years, before then integrated farming for NGOs), animal raising, special topics for rural women and in the last 3 years also special 3-day training about organic farming. Under the SKOP programme several education activities for farmers were under way at the end of 2001: organic farming, integrated farming, fertility and crops rotation, animal welfare... Within the Phare CBC Programme, several courses have been held for Slovenian extension service workers using Austrian Hungarian or Italian experts have been performed. Some money was spent on laboratory instruments. There is also different ecological, agriculture, rural development and other NGO's providing training courses regarding rural women, rural youth, protected areas and agriculture, organic farming,

rural development, sustainable tourism and other specific agriculture subjects. DOPPS (the Slovenian Association for Studying and Observing Birds) published a leaflet about using special farming techniques to protect birds.

Information: Unions, associations, the Extension Service and the Chamber of Agriculture-Forestry are informing their farmers and members about important new legislation, regulations, different activities, seminars etc. Some have their own magazine, but there are also newspapers relating to different professional specialized or general agriculture on the market including more and more environment and animal friendly contents.

Research and Technologies: The State Agricultural Extension Service has the responsibility for assisting farmers and their work. Regarding more sustainable technologies like organic farming, integrated farming etc., NGOs were the first to start promoting and training interested farmers in organic farming topics. Nowadays there is cooperation between both sectors. In the last few years educational institutions like the Biotechnology Faculty (University of Ljubljana), Faculty of Agriculture (University of Maribor) and Veterinary Faculty (University of Ljubljana) have been carrying out research on more sustainable farming practices/technologies and on animal welfare, but the results are unfortunately not well connected with practice. Non-university research institutions include the Agricultural Institute of Slovenia, the Slovenian Forestry Institute, the Institute of Hop Research and Brewing Žalec, the Fisheries Research Institute, ERICo Velenje Ecological Research Institute, the Institute for Sustainable Development (working on organic farming and rural development projects).

Financing: CRPOV: Programmes for rural development started in 1991. Around 250 different regional projects have been supported. The input from the Ministry for Agriculture was 50% for introductory activities (50% local community) and 33% for the implement phase (33% local community, 33% organizers of the project). SAPARD-Pre-accession help for agriculture, provisions in the frame of Slovenian programme of rural development 2000-2006, which was approved in 2000. In the seven year period Slovenia should receive around 45,1 millions EUR, each year around 6,4 million EUR, which represents 28,9% from SAPARD funds; in addition 15,5% will come from national and 55,6% from the participants side. SAPARD should start in the end of 2001. Phare CBC started in the year 1994. The value of each project is between 150.000-300.000 EUR, with a Slovenian contribution of up to 20% just for some special costs. Agricultural-Environmental Programme/SKOP - just national funds: in the year of 2000 there was about 3,4 million EUR spent and 60,196 farmers received the subsidy, but in the year of 2001 63,985 applications were accepted and 9,2 million EUR spent. Unions and associations are financed usually by the Ministry of agriculture, the Ministry of environment and other Ministries, depends on projects. Some extra money is raised from different above mentioned projects, from different founds like Office for Youth, from memberships, etc.

Cooperation: The following is the list of cooperation in this area: the Union of Slovenian Rural Youth established is member of European Committee of Young Farmers and 4H clubs, association member of CEJA-a (European Union of Young Farmers); the Union of Slovenian Organic Farmers Associations is a legal member of IFOAM— cooperation with other organic farmers associations like AIAB, Ernte on education, marketing. Active involvement in Alps-Adriatic Sea Symposium (Slovenia-Italia-Austria) on organic farming; the Co-operative Union of Slovenia is member of ICA (International Co-operative Association); the Association for Agricultural Students is member of IAAS (International Association for Agricultural Students); the Chamber of Agriculture and Forestry has been cooperating with the Austrian chamber; the Slovenian Countrywomen Union is a member of the World Union of Countrywomen and the working group CEA (European Congress of Agriculture), but financial problems restrict international travel. There is good cooperation with Austria (Styria region) and in Slovenia-Austria/Carinthia-Italy/Julian regional projects, and also cooperation in COPA women commission; the Syndicate of Slovenian Farmers: good cooperation exists between French, German and English syndicate (visits, where they learned how one should react during different negotiations, how to reorganize the organization, etc.), participation in the Congress of European Agriculture and in the Days of European Retired Farmers Associations, cooperation with the Italian Association of Direct Production (Coltivatori diretti), with CEA & COGECA; the Association of agri-tourist

farms: a tourist guide has been translated into 4 foreign languages (German, English, Italian, Croatian), accessible also on internet side.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: The Council for Sustainable Development acts as an overall coordinating body as it is empowered to consult the government. However, the Council cannot make decisions, so the Slovene parliament and government are the main decision-making bodies in the field of financing sustainable development. Not only the budget, but also the ministries and various funds are under the supervision of these institutions.
The main legislative basis for financing environmental protection is the Environmental Protection Act (EPA) from 1993. The EPA prescribes the following in the field of financing environmental protection: polluter pays principle (anyone who causes any type of pollution of the environment has to cover all the costs of environmental cleanup). The polluter covers for regular environmental protection costs, costs of compensation for environmental devaluation, costs of endangering the environment and health, costs of sanitation of environmental damage, taxes and charges; environmental taxes and charges can be introduced to stimulate reduction of pollution; concession charges cover the extraction of natural resources; the polluter pays a tax or a charge for polluting water, air and ground as well as for creating wastes, while users of natural resources pay a charge for the use; and, the public costs of environmental protection, such as the costs of administration or environmental monitoring, are financed by the government.

Programmes and Projects: The main programme that supports the implementation of the Environmental Protection Act is the National Environmental Action Programme (NEAP). Apart from the NEAP, a CO2 emission tax, water effluent charges, sewage charges, municipal waste user charges, levies related to the management of nuclear waste, road tolls/pricing, water extraction charges, the national level Environmental Fund and landfill tax are in force. Product charges and environmental tax reform are being discussed. Subsidies for environmental infrastructure projects are in line with sustainable development guidelines and European legislation directives. Policies are in preparation to make foreign direct investment (FDI) more environmentally friendly. In the NEAP it is assumed that its implementation until 2003 will cost approximately 1.19 billion US$. The financial sources predicted to cover for this cost are the following: long-term environmental contingencies that are reserved by companies for the sanitation of environmental problems in accordance with the Law on privatization; loans from the Ecological Developmental Fund; long-term sources/mechanisms: loans from international financial institutions such as IBRD, EBRD, EIB; the local community or national bonds; and BOTs; grants from the EU for the implementation of the environmental Acquis: Phare (70% for investment projects and 30% for institution building), ISPA and SAPARD, cohesion funds of the EU and structural funds of the EU; budgetary funds of Slovenia: funds for implementation, funds for communal infrastructure, co-financing of Phare projects; foreign direct investments; loans from commercial banks; Global Environmental Facility; donations; private capital; subsidies; and, indirect financial sources, functioning through the budget and based on the polluter pays principle and user pays principle. Within the NEAP, the strategy and short-term action plan for green-house gases emission reduction is defined. The first step to green tax reform was the 1997 CO2 emission tax. The amount levied is based on the level of carbon in certain fuels. The current tax per kilogram of emitted CO2 is about 2% of the fuel sales price. Revenues from this tax are used to fund national environmental projects; in particular, the improvement of cleaner fuel production. The incomes of the CO2 tax will also partially be directed to the stimulation of energy saving, energy efficiency, and use of renewable sources of energy.
As water management is an area where heavy investments are necessary, the programme for waters specifies available financial sources for execution of programmes and investments for water supply and waste water treatment and enables the financing of the water management field.
Arising from article 80 of the EPA the Regulation on tax for environmental pollution due to waste disposal will enter into force on January 1 2002. The tax comprises two parts: pollution of soil and air, and ranges from 0.00225 US$ per kilo of inert waste to 0.0225 US$ for a kilo of dangerous waste. This tax shall partially ensure financing of the waste management field.

Status: One of the major sources of financing the implementation of Agenda 21 is the national budget. Total public expenditures reach up to 46% of GDP and important shares of the expenditures are directed into the social (38%), educational (12%) and health sectors (13%). Although still low, the amount of expenditures for environmental protection has grown and the share of public expenditures for environmental protection has increased.

Table 1: Expenditure on environmental protection in Slovenia, % of GDP

Year	Public sector and foreign assistance	Companies and households	Total
1996	0.374	0.783	1.157
1997	0.565	0.681	1.247
1998	0.653	0.467	1.120
1999, estimated	0.887	0.334	1.221
2000, projection	0.947	0.372	1.320
SEDS* goal	0.943	0.557	1.500

Source: SLOVENIAN ECONOMIC MIRROR10/2000

* SEDS – Strategy for economic development of Republic of Slovenia

Implementation actions to meet the objectives laid down in the NEAP imply an annual cost of implementing EU legislation of 248 million US$ up to 2003. Starting with the phase of EU legislation transposition, Slovenia is entering into the phase of implementation of EU legislation. To meet these requirements huge financing sources will be needed: a first estimation indicated that 2.67 billion US$ is needed in order to completely implement the environmental Acquis. The figure represents nearly 1.5 % of annual Slovene GDP, which calls for an increase of funding, since currently expenditures to the environmental sector in Slovenia are estimated at around 1.3% of Slovene GDP. Even according to the needs for financing the NEAP, which reach expenditures at an annual average level of 1.44% of GDP, this achievement is not enough. All the expenditures for nature protection should increase to 2% of GDP by year 2006 in order to implement the NEAP. It should be noted that the incomes of local municipality budgets from environmental taxation have, according to evaluations, increased in the last few years and therefore have become an important source of financing the priority tasks of the NEAP.

Capacity-Building, Education, Training and Awareness-Raising: Apart from the above mentioned budgetary funds, there are a few funds in Slovenia that not only finance sustainable development, but also function as capacity-building, educating and awareness raising institutions. The most important is the state owned public fund - Slovene Environmental Fund (Eko-Sklad), which was established under the EPA in 1993. The main objective of the fund is to provide loans on preferential terms for investments in the field of environmental protection from its own capital and from capital obtained from other sources. Loans are provided on the basis of public announcement. The next is the Fund for Efficient Use of Energy Investments. The fund encompasses 9.9 million US$ of resources that are based on a commercial interest rate and 1.98 million US$ of no interest resources from the Phare programme. Together with the governmental subsidies of 1.35 million US$ for the interest, the interest rate is reduced to only 60% of the commercial interest rate. The Public Fund for Rural and Regional Development is a finance organization for achieving Slovenia's public objectives in the field of regional policy. The Fund collects and allocates financial funds for regional structural policy. Umanotera, the Slovene Foundation for Sustainable Development, is an institution that has done a lot in the field of capacity-building, education and training, and awareness raising (e.g. project Green Partnership) rather than in direct financing of sustainable development.

Information: Information related to financing sustainable development is made available to potential users via the Internet and different reports.

Cooperation: Slovenia's cooperation is as follows: EU grant sources, including: PHARE Cross-Border Cooperation Programme (CBC); PHARE Large-Scale Infrastructure Facility Programme (LSIF); PHARE National Programme; ISPA (Instrument for Structural Policies for Preaccession); loans from multilateral creditors (WB,

EBRD, EIB); private sector investments —mainly under concession agreements, and especially for wastewater treatment projects and waste management centres, which enables higher-quality and cost-effective services (B.O.T. models); and, bilateral arrangements with Austria, France, Germany, Japan, Netherlands, United States and United Kingdom (e.g. British Grants Slovenia).

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: The Ministry of Science and Technology (since 2000 part of the Ministry of Education, Science and Sport) is the main player in the field of science, research and technology issues on national level. Science is incorporated into decision-making through the National Council for Science and Technology. In addition, it is incorporated through applied and target-oriented projects, to provide basic parameters for decision makers and for ad-hoc organized groups. Scientists are regularly involved in activities for the preparation and implementation of the National Environmental Action Plan (NEAP) and its numerous implementation projects.

Programmes and Projects: In 1998 the Ministry of Science and Technology initiated a national research programme, entitled "The Nature and civilization-cultural image of Slovene space and population through time" (narava in civilizacijsko-kulturna podoba slovenskega prostora in èloveka skozi èas). The National Research Programme, initiated in 1995, was merely a traditional research programme, which also included some environmental issues. The new research programme for the period 2001-2006 includes the environment merely as an development opportunity for the Republic of Slovenia. In the year 1999 a new International Centre for Sustainable Development was established, as a result of the cooperative efforts of different national research institutions from a variety of fields of expertise (chemistry, biology, agriculture, etc).

Status: To date, scientific research and recommendations provided and developed by means of research have provided a professional basis for several governmental measures aimed at sustainable development.
More coordinated activities in the field of sustainable development and the scientific response to the issue, were initiated in the year 2000. International (and regional) cooperation with different institutions started. The National Institute of Chemistry started an education project on clean production in 2001. The project is solely designed for the introduction of clean production principles into Slovene companies in accordance with US EPA and Eureka-Euroenviron methodologies. The project consists of ten workshops, expert advice to particular companies and the production of final reports on the results at every beneficiary. Projects on different sustainability issues were co-financed in the last years (climate change, Karst region, Alpine region, water and waste). A very low percentage of the research money, which is available at the national level, was explicitly earmarked for projects on sustainability issues. The process of accession to the European Union is opening new possibilities for the cooperation of Slovene researchers and scientists within the scope of the 5th European research programme,

Capacity-Building, Education, Training and Awareness-Raising: In the last decade two international scientific/academic events were organized on the issue of sustainable development (Forum Bled '99 and ICSD workshop on SD in the year 2000).

Information: See under the headings **Information** and **Research and Technologies** in various chapters of this Profile.

Research and Technologies: Scientists, often with the help of scholarships, are included in special research via projects supported through international cooperation. In addition, new graduate and postgraduate programmes have already been established which are primarily relevant to sustainable development. The Science sector has conducted research on creating more sustainable production and consumption patterns by undertaking projects such as the following: Rational use of energy; Smart house; New technologies for food production; Recycling of waste: and Biodegradable oils. Research related to water management is currently being undertaken in Slovenia by public and private research institutes, universities and consulting firms.

Financing: Research is funded through national budget (by different ministries), international funds, and industry.

Cooperation: Cooperation has been established with some specialized UN institutions and agencies (f.e. UNIDO, UNEP).

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: The ministries of Education, and Environment and Spatial Planning are primarily responsible for environmental education activities. They encourage partnerships, mobilize resources, and assess the needs of different population groups. According to the White paper on Education in the Republic of Slovenia in page 35, the Unity of Science and Pluralism of Cultures and Values is "Ecology and environmental protection deserve a special mention in this context." As a part of the National Environmental Protection Programme, Slovenia prepared a national plan on education for sustainability, which was submitted to its Parliament in 1998. Implementation is still going on. NGOs play an important role in raising public awareness. There are about 130 NGOs in the field of environmental and nature protection, whose main activities include: spreading of environmental awareness, education and drawing attention to various problems. Some of them are fairy strong, influential and well respected, for example the Foundation of Environmental Education of Europe in Slovenia (FEEE-S), which is running the Eco schools project; UMANOTERA; EKOS Zasavje; and the Slovenian Ecological Movement.
The national plans of action for environmental education and green dimension are implemented through the decisions referred to above, and through the national school development project Eco school as a way of life, and those undertaken as a main part of the "National Environmental Education" and the National Institute of Education in the use of natural resources. In addition, several innovative initiatives are being carried out locally with the aim of developing education that gives priority to understanding sustainable development. Cooperation takes place at several levels among NGOs, research centres and ministries, through projects, seminars, coordination meetings and other mechanisms.

Programmes and Projects: Slovenia has some other innovative educational and public awareness programmes focusing on the environment, including: "Young Reporters for the Environment"; Clean up the world Environment Education Programme (SWEEP), involving a European network for exchanging and developing teaching materials; a Curriculum Development Unit for "European Action for the Environment"; Programme initiative to exchange information on the INTERNET. The Ecological Centre of Pomurje promotes awareness-raising by publicizing environmental publications such as Exploring the European Environment, Transport, Energy and Water. They cooperate with local authorities. Funds are available for awareness raising measures such as recycling, waste minimization, anti-litter initiatives, promoting sustainable lifestyle etc. See under **Decision-Making** and **Status**.

Status: The Primary and Secondary School provides the basis of environmental education in schools. The general goal of the National Education curricula is that education should further the pupil's understanding of human interaction with nature. The National Act emphasizes the integration of environmental education into existing subject areas. The new subject targets, together with the redefined basic knowledge and proficiency area, demonstrate that the "green" aspect is essentially present in many subjects.
In Slovenia, education is free at all levels. In-service training programmes are available for teachers, concerning nature and methods of environmental and developmental education. Environment and development concerns are part of teacher educational programmes in the National Institutes of Education. Revisions to the curricula for primary and secondary school levels, and for vocational schools, are being undertaken. At the primary and secondary levels, printed material related to sustainable development is often used, while in secondary and vocational schools it is used occasionally. Audiovisual tools, and special classes, workshops and seminars are occasionally used in primary, secondary and vocational schools; less at the university level.
Development of new curricula, teacher training and public awareness campaigns are priority action areas for reorienting education towards sustainable development. Schools and universities are not part of any national, regional, or international network, which addresses environment and development issues. There are also innovative approaches to educate and raise awareness of families and local communities such as the "Economizing on drinking water and the use of rainwater in housekeeping" - promoted by some NGOs. They are involved in promoting innovative education, public awareness or training activities related to sustainable development. The National coordination of Eco schools project has also been involved in environmental education networks, and schools

promote programmes with environmental themes (i.e., Earth Day, Word day for water, World Environmental Day, Energy Awareness Week, and Eco schools competitions). The Eco schools aims to promote active cooperation between home, school and the local community in advancing the educational interests of the children.

Information: See under **Programmes and Projects**.

Research and Technologies: No information available

Financing: No information available.

Cooperation: No information available.

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

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

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

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

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

This issue has been covered under the heading **Cooperation** in the various chapters of this Profile. However, you will find below a list of International Legal Instruments of Slovenia.

One of the goals coming from the Rio Summit was to develop international law on sustainable development. There are several conventions prepared at global and regional level and Slovenia is party to almost all those conventions and is more or less active in all of them.

Conventions at global level: Slovenia is a party to the following conventions at the global level: Convention on Biological Diversity ratified by Slovenia (Ur.l.RS MP št. 7/96) (Slovenia is preparing Biological Diversity Strategy - almost finished); Cartagena Protocol on Biosafety to the Convention on Biological Diversity – signed by Slovenia in 2000 (to be ratified in the beginning of 2002); UN Framework Convention on Climate Change, ratified by Slovenia: (Ur.l.RS MP št. 13/95) (Slovenia is preparing first National Report – almost finished); Kyoto Protocol was prepared under the CC convention and was signed by Slovenia in 1998 (to be ratified by Slovenia in 2002); UN Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa ratified by Slovenia (Ur.l.RS MP št. 14/01)

Conventions prepared at regional level (UN ECE): Slovenia has signed and/to-be ratified the following convention at the regional level: Convention on Environmental Impact Assessment in a Transboundary Context ratified by Slovenia: (Ur.l.RS MP št. 11/98); Convention on the Protection and Use of Transboundary Watercourses and International Lakes ratified by Slovenia: (Ur.l.RS MP št. 5/99); Protocol on Water and Health, signed by Slovenia in 1999; Convention on the Transboundary Effects of Industrial Accidents is not published yet –ratification act was accepted by Parliament in November 2001; Convention on Public Participation, Access to Information and Access to Justice in Environmental Matters – soon to be ratified (beginning of 2002)

There are two more conventions at regional level, which were prepared to protect environment and promote sustainable development in certain region.

Convention for the Protection of the Marine Environment and the Costal Region of the Mediterranean (Barcelona convention) and its protocols: Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea; Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities; Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

The convention and protocols were amended with sustainable principles in 1995 and in 1996. Slovenia will ratify those amendments in 2001. Slovenia is active in the several programmes under that Barcelona convention (seven of them) and especially in Mediterranean Commission for Sustainable Development.

Convention on Protection and Sustainable Use of Danube River (Ur.l.RS MP št. 12/98) —Slovenia is playing active role in International Commission for the protection of Danube River and in working groups established under Danube convention which are: Data Management Expert Group, Accidental Emission & Warning System Expert Group, Monitoring, Laboratory & Information Management Expert Group, Emission Issues Expert Group.

Other Conventions: There are some other conventions in the field of environment which were ratified by Slovenia: Convention on the Conservation of Migratory Species of Wild Animals (Ur.l.RS MP št. 18/98); Convention on the Conservation of European Wildlife and Natural Habitats (Ur.l.RS MP št. 17/99); Convention on International Trade in Endangered Species of Wild Flora and Fauna (Ur.l.RS MP št. 31/99); Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Ur.l.RS MP št. 15/93); Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions (Ur.l.RS MP št. 7/98) etc.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: The Ministry of Environment and Spatial Planning (MESP) is primarily responsible for the information related to sustainable development and environmental protection. Within the Ministry the Agency of the RS for the Environment in particular is responsible for environmental reporting as well as developing indicators, where the Eionet.si national point is located. The Statistical Office of RS is responsible for statistics, and the Institute of Macroeconomic Analysis and Development has developed a set of indicators for monitoring sustainable development in the framework of the Strategy of Economic Development of Slovenia.
The Environmental Protection Act, adopted in 1993 as a framework law outlines the contents of the Environmental Protection Information System in the following way in Chapters 73: the system shall specifically include information on: natural elements, phenomena, factors, and ecosystems; natural goods; environmental pressures; use of material and energy; dangerous substances; origin and distribution of waste; emissions according to their sources; parties responsible for environmental pressures; parts of the environment with protected or endangered status; environmental damage, ecological accidents, and abuse of the environment; health and ecological conditions of the population; facilities and equipment intended for environmental protection; financial means and costs of environmental protection; public services, organizations, and institutions engaged in environmental protection and their authority; regulation, standards, and norms for environmental protection; and the state of techniques, technology, and metrology in the field of environmental protection. So far, unfortunately, the Minister has not yet prescribed the structure, common basis and categories, and levels of aggregation of data contained in the system.
According to the Environmental Protection Act (Article 75) the Environmental Report was supposed to be prepared annually and so far two reports have been prepared since 1993, the latest one in 1996. The third State of Environment Report is currently under preparation, expected to be released in 2002.

Programmes and Projects: The National Environmental Action Programme (NEAP, 1999) in the section Environmental Protection Information System actions were outlined primarily in order to implement the provisions from the EPA, and so far have been carried out only partially. Within the Strategy of Economic Development of Slovenia a set of indicators for monitoring sustainable development has been developed.
The following programmes are an indication of developments in the field of information in Slovenia:

- *EIONET.SI*: The Ministry of the Environment and Spatial Planning is the Slovenian National Focal Point to the European Environment Agency (EEA) and the connection point for EIONET (European Environment Information and Observation Network) in Slovenia. Requests from the EEA of data and information regarding various environmental topics are relayed to different Slovenian expert institutions. Data compiling on the national level for the work on the European Environmental "State of the Environment Report" is carried out at the NFP with the help of many experts;
- '*Eurowaternet – Slovenia'* (EWN-SI) completed its first phase in 2001. It is the result of the 'Eurowaternet implementation in Slovenia' project developed within the framework of EIONET-SI. The EWN-SI is the system of aggregated, verified and logically integrated information on Slovene waters. Data sources are national information evidence and monitoring systems. The gathered information in the EWN-SI is a basis for the calculation of performance indicators, with which the efficiency of water environment protection policy in Slovenia will be tested. Therefore, they are organized in the DPSIR (driving forces, pressure, state, impact, response) system. The same as the Eurowaternet, the EWN-SI gives information on the pressures on water bodies and on the status of water environment resources in Slovenia. At the same time it gives general information on all surface and groundwater water bodies in Slovenia and other to the system DPSIR related basic information. With the development of the system, users will be able to get even more information (meteorological, hydrological, water use, point and disperse pollution, dangerous substances in water, quality of drinking and bathing water, ecological status..). Furthermore, models to determine the indicators of effectiveness for the national and regional levels will be developed.
- *Convention on Biological Diversity, Clearinghouse Mechanism*, contains databases on Endangered plant and animal species in Slovenia, Protected areas, Red Data List of Threatened Vascular Plants in Slovenia, Red List

of Threatened Mosses in Slovenia, as well as legislation, institutions, experts and links to international networks;
- At the local level a pilot set of indicators of sustainable development was prepared for the City of Ljubljana by the Urban Planning Institute of RS in 1999.

Other specific references to information can be found in respective chapters of the country profile.

Status: See relevant sections in other chapters of this Profile.

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

Research and Technologies: No information available.

Financing: According to the NEAP about 200.000 US$ should be spent for the *Environmental Protection Information System* from Ministry of the Environment and Spatial Planning budget annually.

Cooperation: Within the UNEP/MAP programme Slovenia was included in the pilot project for *indicators for sustainable development* project (ISD) that aims more generally at developing indicators of progress towards sustainable development in the 20 Mediterranean-rim countries, the Contracting Parties to the Barcelona Convention. 155 sustainability indicators were developed at the national level for Slovenia and 55 at the regional level (3 coastal municipalities). The Mediterranean Commission on Sustainable Development served as a preferred forum for this work, which was also enriched by national tests and by the experience from the project on the EPIs. This activity made it possible to arrive at the recommendations adopted in November, 1999, in Malta by the Contracting Parties, especially including the adoption of a "joint set" of 130 indicators for sustainable development in the Mediterranean.

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CHAPTER: INDUSTRY

Decision-Making: Ministry of Economy (http://www.sigov.si/mg/index.html) in the compliance with the EU pre-accession strategy of Slovenia and Strategy for Increasing the Competitive Capacity of Slovene Industry gives the priority to the introduction of new approached to the industrial policy by the horizontal measures: improvement of technological equipment and renovation, stimulation of the innovations and transfer of R&D achievements into industry, stimulation of the market approach, networking among the companies at home and abroad, introduction of information technologies, education. Measurements, data collection and other tasks related to the emissions and pollution registers from the industry are performed by Agency for Environment (constituent body of the Ministry for Environment and Spatial Planning) (http://www.sigov.si/uvn/). Chamber of Commerce and Industry (http://www.gzs.si/) strives to establishment of the favourable conditions for improvement of the competitiveness. Council for environmental protection (http://www.sigov.si/svo/) supports the efforts for the technological transformation and renovation of the industry in accordance to the EU standards. Centre for International Competitiveness has a task to encourage the compliance of Slovene Industry to the international measures. In addition to the national government, which represents a wider societal interest also, participate in decision-making experts (sciences and researchers), representatives of business world, industry, business, trade unions.
This area has been regulated by a number of laws and sub-laws, each regulating a segment of the industrial sector. In many laws and horizontal measures there are demands and limitations for the industry sectors. The legislation on industrial pollution and risk prevention is the most comprehensive set of environmental legislation. The Environmental Protection Act is the framework law, which regulates the industrial pollution. Strategy of Economic Development of Slovenia (2001) and National Development Programme (2001-2006) address also the environmental protection issues which determine the industrial development. National Environmental Action Programme (1998) sets the foundations for the industrial development in the line with the sustainability principles. NEAP lists the concept of cleaner production among the most important concepts, which would need to be adopted by the Slovene industry. In 1996 the Government of the RS adopted the Strategy to increased competitive ability of the Slovene industry. This document set the horizontal measures aiming at all sectors and all factors which influence the competitive ability. According to the document, the main problem of Slovene industry is technological underdevelopment. Horizontal measures from the document aim at: stimulation of the strategies for the increased productivity, which include introduction of the integral system for constant improvement in the companies; and increased competitive ability at the level of companies (market economy approach, technological renovation of companies). Other development strategies address industrial sector in their horizontal measures. The Strategy for Reduction of Greenhouse Gas Emissions requires active role of various sectors, including industry. Guidelines on strategic waste management and NEAP include programmes of guidelines and actions including industrial waste management, but we do not have a concrete programmes at national levels.

Programmes and Projects: A Programme of phasing off the environmentally unfriendly production is a reason for many economical and social problems. After the closure of the Mežica lead and zinc mine, Idria mercury mine and uranium mine in Žirovsk vrh, Slovenia does not have underground mineral mining production. Closure activities are undertaken at all mentioned locations, including ecological remediation/rehabilitation of sites. In Slovenia only coal mines still operate. As a part of the global initiative, the Association of Chemical and Rubber Industries began to implement the Responsible Care Programme, a voluntary commitment of the chemical industry to constantly improve its safety, health and environmental performance. The number of companies committed to the programme grows year by year. 15 chemical companies prepared a Report Responsible care 2000 and gain the right to use the logo Responsible Care until the year 2002. Also the companies of other branches make such report, but the content of report is not prescribed like for the chemical companies. Leather Industry Vrhnika (http://www.iuv.si) cooperates in the project Development of technology for making eco-leather in the period 2000 - 2001, which is co-financing by Ministry of Education, Science and Sport. In 1999 Slovenia formulated a proactive industrial policy which is being implemented via two interrelated programmes: Development Programme for the Increased Competitive Capacity of Slovene Industry and in the Programme for adjustment of the Slovene textile and clothing industry as

well as leather and shoemaking industries to the EU internal market conditions. After two unsuccessful attempts in the years 1994 and 1995 project Cleaner Production was launched for the third time in the year 2001. The project is carried out by the Institute for Chemistry (http://www.ki.si/), the consulting company Liveo (http://www.liveo.si/) and Austrian Stenum and supported by the Chamber of Commerce and Industry, Ministry of Economy, Ministry of Environment and Spatial Planning (http://www.sigov.si/mop) and Eco-fund (www.ekosklad.si). The aim of the project is to help the companies with the introduction of the environmentally sounder technologies in the existing production processes. A project Stimulation of the introduction of the integral system of constant improvement in the companies is in place and it aims to increase the overall competitiveness of Slovene industry. This should be done through transfer of the successful international approached and tools for the introduction of the systems for constant improvement and implementation in the selected companies. The programme period is 2000 - 2003 and 60 companies participate in this programme, which is run by Deloitte&Touche d.o.o (http://www.deloittece.com/). The scope of a project of Phasing out ozone depleting substances is also industrial air pollution. The activities within the frame of this project are funded by the Global Environmental Facility Trust Fund, Ministry of Environment and Spatial Planning, Chamber of Commerce and Eco-fund. See also under **Decision-Making** and **Status**.

Status: The industry has to comply with many laws and sub-laws to reduce the (industrial) pollution of the environment, because of which it carries out the following activities: Export oriented companies have to obtain for their vehicles CINT document containing the information about technical and safety requirements for less environmentally damaging vehicles; Industry has to report on their air emissions to the Agency for Environment; Collection of secondary resources (steel, copper, glass, paper, textile and plastic) from the industry sector is relatively successful; Share of renewable energy resources in the primary energy production is 8,5 % especially due to the increased use of liquid and gas fossil fuels; 39% of drinking water is still used by industry sector and industrial wastewater facilities are still not in place at all sites, where the wastewater treatment is required — Taxes on the wastewater aim at diminishing this problem; and, Industry sites usually dispose off their waste in combination with the municipal waste, since rarely the company has its own disposal site — There are 27 disposal sites for industrial waste. (Some dangerous waste is exported in the compliance with Basel Convention. Some companies have on site incineration plants as a part of technological processes in some cases the technology used is co-generation, the heat is used in the local heating systems.)
Slovenia also transposed into national legislation EU directives on the monitoring and prevention of the industrial pollution (IPPC, SEVESO, VOC directives). In Slovenia, there are 120 identified companies which will have to comply with the IPPC directive (19 % of the companies is already in compliance with the requirements of the Directive, 86% will comply with these requirements by the 2007 and 14% by the end of 2011), 640 companies have to comply with the VOS directive and 50 with the SEVESO. Aggregate indicators show too high environmental intensity of the development up until now. Energy intensity is two-times higher than the average rate in the EU. Share of the export, which base on the natural sources is too high accordingly to the Slovenian resources of economic relevant mineral and energetic sources. Dirty industries contribute to the added values of the manufacturing one fifth. The production and the export of dirty industry were rising too quickly in the second part of the nineties. The business sector still relays on the traditional industrial branches (textile, clothing, metal). Employment share and capital share in the industries which today represent the driving force of the economic growth (computer and communication equipment, conductors, biotechnology) are still relatively low.
Environment becomes an important actor of the development also in Slovenia. The environmental activities become an independent and profitable business, for example industry of environmental protection equipment, industry of waste management. Slovenia is a country with only two market instruments for environmental protection, tax for water pollution and tax for air pollution with CO2. In the year 1998 there were 80 m US$ investments into the environment protection, of which industry invested almost the half. The current expenditure for environment protection was about 42 m US$ in the 1998, the industry contributed more than 30 m US$. According to the statistical data there is a trend of decrease of sulphur dioxide emission in the air from the power stations, heating plants, mining, and manufacturing. In 1990 there were 175.000 tons of emissions, in 1998 116.000 tones of SO2 emissions. Industry discharges 27.331.000 m3 waste water in the 1998, of which only 14.798.000 m3 were cleaned.

Capacity-Building, Education, Training and Awareness-Raising: Education is carried out in the framework of formal education programmes at the various faculties as well as informal education in the form of workshops, seminars, etc. Various international exchange and training programmes are also available (Tempus, Regional Environmental Centre for CE Europe, Phare, UN programmes, European Environmental University). Education in the field of the industrial pollution is also organized in the frame of the Taiex programme, which represents technical assistance of the EU to the candidate countries for the EU accession. Educational programmes about the environmental management systems, cleaner technologies, and IPPC directive are part of the educational programmes offered by the Institute for Technical Education (http://www.zti-lj.si/), Chamber of Commerce and Industry and other organizations.

Information: Information related to industry, environmental protection, and industrial pollution is available throughout several sources. There are paper and electronic publications, reports, annual reports made by governmental bodies, non-governmental organizations, Statistical office, business sector, media companies, and market-research organizations. Information is also easily accessed via the Internet. The data are collected by the different institutions. These are the reason of the unharmonization of collected information. EIONET Slovenia and Statistical Office provide some indicators which show the trends in the industry and its pollutions. But there is no comprehensive and easily available database. On the web sides Statistical office (http://sigov.si/zrs) are aggregated data about: emissions of sulphur dioxide by energy and raw materials consumers; water supplied in enterprises; water used in enterprises by type of use and activities; discharge of waste water used by enterprises to land, public sewerage and surface water; purification of waste water used by enterprises; number of enterprises who regular report about their waste and amount of waste; and, waste quantities by type of waste handling.

Research and Technologies: European Commission funded in the year 1997 a project FEMIRC Slovenia which in the collaboration with the Ministry of Education, Science and Sport and contact persons for 5th Framework Programme of EU launched a successful campaign for 5th Framework Programme (research and technology programme of the EU). In the year 2000 FEMIRC was renamed into the Innovation Relay Centre. The task of this Centre is transnational technology transfer and the promotion of innovations with the help to industry, SMEs. Half of the funding for the project is provided by the EU and half from the State budget (Ministry of Education, Science and Sport). Partners to the project are Institute Jozef Stefan, Maribor University and Institute for Chemistry. The project will finish in 2004. Statistical office of the RS collects data directly from enterprises and organizations. It also carrying out statistical surveys: 2 surveys on waste—Public removal and waste disposal, Waste from manufacturing and services sectors in the year 1992, 1995, 1998; survey Water 1 has been carrying on for 15 years which contains industrial water pollution; and, data on gross fixed capital formation and current expenditure for environmental protection are the result of annual surveys.

Financing: Ministry of Economy has financial obligations set in the international obligations in bilateral and multilateral (UN) agreements on cooperation and obligations from the cooperation in the European programmes. Important source of funding is also long term ecological reservations which the companies had put aside in line with the Act on the privatization. These funds should be used for the remediation of the environmental problems.
With the favourable loans Eco-fund encourages the industry to develop safe technologies. The loans programme for the environmental investments included investments in environmentally sound technologies and products and on devices and technologies for environmental protection as well as for the realization of the long term ecological reservations. The qualitative shift of the environmental investments could be observed from end of pipe technologies towards more systematic and integral approach and introduction of Best Available Technologies. Eco-fund cooperates with World Bank, EBRD, European Investment Bank Global Environmental Facility Trust Fund, Commission of the European Community, United Nations Development Programme. Important source of founding is also Slovene Development Company which implements funding of projects and International Development Assistance (IDA), Phare. The estimate expedients for decrease of all sorts of emission as a consequence of exchange the technological lines or material closure in period from 1995 to November 2001 are 52 m US$, who were distribute among 51 projects.

See also under **Status**, **Capacity-Building, Education, Training and Awareness-Raising** and, **Research and Technologies:**

Cooperation: Ministry of Economy is responsible for bilateral relations with individual countries and the cooperation with international organizations like WTO, OECD, UN, United Nations Economic Commission for Europe (UN/ECE), European Union, EFTA, CEFTA and the activities in the framework of the Stability pact programme.

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: *National level*: the ministries of Economy (state vice-secretary, Slovenian Tourist Board); Environment and Physical Planning; Agriculture, Forestry and Food; and, Culture; Association for Tourism and Hospitality at the Chamber of Commerce and Industry of Slovenia (tourism business), Tourist Association of Slovenia (nongovernmental - civil society). The newly established Council for Tourism (representatives from national tourism institutions) at the Ministry of Economy is the body where strategic questions are discussed. At the parliament there is a new sub-board for tourism (under the umbrella of the Board for Economy). There are also numerous specialized tourism associations (health resorts, farmers, castles, ski lifts, marinas, alpine towns, campsites, swimming pools etc.).
Local level: 192 municipalities, 35 local tourist organizations and 530 local tourist associations (civil society). Local authorities are responsible for planning and investment in infrastructure. Non-governmental institutions educate local people about tourism, hospitality, ecology and sustainable development, and contribute to the creation of a sound tourism offer. Local tourist organizations are newly established bodies, where all involved in tourism development participate.
In last decade, since the constitution of the new state, Slovenia has adopted nearly all of the documents, which are important for the development of tourism, all of which are based on the paradigm of Sustainability. The documents are: the Law for the Advancement of Tourism and some subordinate acts; the Resolution on the advancement of further development of tourism with an activities plan (being updated); the Spatial Plan (being updated); the Environmental Protection Law; the Law on Waters; the Law on the Regulation of Physical Space (in preparation); various documents for the protection of natural and cultural heritage (national park, karst caves etc.); National Programme for Environmental Protection; quality standards in hospitality; the Regulation on Environmental Impact Assessment etc. National or regional documents determine the conditions for physical development of the tourism industry. However, there is a lack of documents particularly at regional and local level, which creates problems.

Programmes and Projects: There are numerous projects and programmes promoting and implementing sustainable tourism development. Some are stimulated by support from EU funds, for example Phare, Cross-border, etc. A few examples include: bicycle tracks, forest roads, wine roads, a new sewage system in an alpine tourist resort, etc.

Status: The tourism industry is quite aware of the importance of ecological impacts in tourism (because of the competitiveness) and sustainable tourism development is the paradigm of all strategic documents. All cableways (ski resorts) have exchanged their drive fuel from fuel oil to electricity in the last decade. The new spatial plan will declare one third of Slovenian territory as nature protection areas (with different status), where sustainable tourism will be favoured, and which will positively contribute to the development of tourism in Slovenia. Tourist agencies in particular promote the sustainable development of tourism - each year they become more ecologically conscious in response to demand from tourists. The new tourism strategy will have 3-E as its guidance: ecology, ethnology and economy. However, the pioneers in promoting sustainability and ecologically oriented development are the non-governmental organizations.
For the Slovenian economy tourism is very important. It contributes about 9% to the GDP (by the method of satellite accounts) and 9% to the export of goods and services (52% of export of services). The tourism revenue is about 1 billion US$ yearly, which means 500 US$ per inhabitant, which is not trivial in comparison to big tourist states. Good tourism income per inhabitant is mostly the result of daily tourist visits (day trips, casinos, shopping, recreation, inns etc). Our tourist resorts are small and so they are particularly suitable for sustainable tourism development. We have only one tourist resort with 1,000,000 tourist overnights per year and only 6 have more than 100,000 overnights. In 2000 the total number of tourist overnights was 6,718,998. The relation between domestic and foreign tourism is 50:50. The foreign tourism is growing at a high rate in Slovenia: in 2000 +24% and in 2001 +11%. Foreign tourists are visiting Slovenia because it is green, picturesque, safe, and hospitable and offers

numerous possibilities of relaxation and recreation in intact nature. To preserve that, sustainable development is of the greatest importance.

Capacity-Building, Education, Training and Awareness-Raising: Training programmes on sustainable tourism are an integrative part of education at all levels. In elementary schools there are about 200 tourism youth societies, and now it is also possible to select tourism as a subject. We have 15 schools for tourism and hospitality at the middle level. In last decade two high schools for tourism were established (one with support from Phare). It is also possible to study tourism at the Faculty of Economy and at the department of geography at the Faculty of Arts.
Various tourist professional associations and enterprises organize other training courses. Awareness-raising activities, which are conducted by the Tourist association of Slovenia with its 530 local tourist associations, are of great importance. One of them is the comprehensive project "2000/2001 - Gifts for Grandsons," the other is "My country - beautiful and hospitable," which has a 10-year tradition.

Information: Decision-makers have access to all information and promotional materials, statistical and other data and figures and to all materials, which promote national measures concerning sustainable development. This information includes results from the measuring of spa- and sea-water quality, air pollution, traffic saturation etc. Internet has arisen as a splendid help, to provide information and to promote sustainability between those who give and those who take tourism.

Research and Technologies: Cooperation between research institutions at home and abroad is traditional. New ecologically oriented technologies are used in the tourism industry (hotels etc.), for economic reasons and for more effective competition in the global tourist market.

Financing: To develop and implement sustainable tourism projects some support from the state is available (for science, education, resort development, business etc). For example: the ski resorts modernized ski lifts with specific support from the state (to use electric energy). However, the available state funds do not cover all of the needs and wishes. In addition, some projects gained some welcome support from EU funds (Phare, Cross-border etc).

Cooperation: As tourism is becoming a global business, cooperation is most needed in all fields of activities. There are some international projects for the promotion of the sustainability in tourism, in which Slovenia participates: Blue Flag, Entente Florale, Nations in Bloom, etc.

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