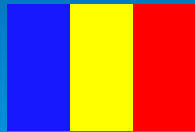


JOHANNESBURG SUMMIT 2002

ROMANIA



COUNTRY PROFILE



UNITED NATIONS

INTRODUCTION - 2002 COUNTRY PROFILES SERIES

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

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

The purpose of Country Profiles is to:

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

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

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

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

NOTE TO READERS

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

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LIST OF COMMONLY USED ACRONYMS

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

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

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

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

Decision-Making: The central authority is the Ministry of Waters and Environmental Protection (MWEP) and at the local level are Environmental Protection Inspectorates. According to the provisions of the Law on Environmental Protection (No. 137/1995), republished, article 7, the authorities responsible for environmental protection are “the central authority for environmental protection and its local agencies”. The MWEP has the following main responsibilities: policy making in the area of water and environmental protection at national level; drawing up the strategy and the specific regulations for developing; harmonizing these activities into the general framework of the Government policy; and co-ordinating the implementation of the Government strategy in the concerned areas; accomplishing its role as a state authority for the synthesis; and co-ordination and control in these fields. It also collects data on the state of the environment and makes them available to the general public. Also, MWEP is the National Sustainable Development Co-ordinating Body. Romania has a decentralized environmental protection management system. There are 42 local Environmental Protection Inspectorates (EPIs) subordinated to the MWEP that play a key role in the enforcement of legislation. Of the 42, 41 are located in the respective counties and the last one covers the Bucharest municipality. Another unit subordinated to the MWEP is the Administration of the “Danube Delta” Biosphere Reserve.

Other ministries and institutes: The legal framework for environmental responsibilities of other ministries and institutions is defined in chapter IV of the Law on Environmental Protection (No. 137/1995), republished. Thus, environmental responsibilities are with the ministries of: Health and Family; Public Works, Transport and Housing; Industry and Resources; Public Administration; Education and Research; Agriculture, Food and Forest; Tourism and Youth and Sport; Interior; and National Defense. The National Environmental Action Plan triggers collaboration on environmental protection among all responsible ministries and institutions and includes priorities for all economic sectors (transport, agriculture and industry). The MWEP chairs the Inter-ministerial Committee that co-ordinates the NEAP. Governmental Decision no.1097/2001 was elaborated to enlarge the attributions of Inter-ministerial Committee for the promotion and updating of the National Environmental Action Plan in order to have the competence to approve all the sectoral policies and strategies referring to activities with environmental impact and to accelerate the process of endorsement of the legal acts drafts by the involved ministries in environmental problems.

Programmes and Projects: *Climate Change:* Romania has signed a memorandum of understanding (MoU) with Switzerland to establish the framework for “activities implemented jointly” under the Convention on Climate Change. The Netherlands is also co-operating with the Romanian authorities on “activities implemented jointly”. One such project was implemented for the monitoring of power plants emissions and energy efficiency.

Other countries have also expressed their interest in developing MoUs for joint implementation with Romania.

Protection of the Ozone Layer: With the support of the Multilateral Fund and the United Nations Industrial Development Organization (UNIDO), a project on institutional strengthening was implemented; involving a workshop for the customs authorities as well as a public-awareness campaign. The Ozone Action Programme of the UNEP Division of Technology, Industry and Economics is assisting Romania's Ozone Unit, in particular by providing technical information and publications. *Biological Diversity:* The

Danube Delta Biosphere Reserve Authority received assistance from a project of the World Bank-GEF (Global Environment Facility) on “Biodiversity Conservation in the Danube Delta” (from 1995 to 2000). Another GEF-World Bank project, “Biodiversity conservation management in Vanatori Neamt, Retezat, Piatra Craiului” (1999-2004). This project aim at strengthening the national framework for biodiversity conservation and at developing models for protected areas and forest management.

Two further GEF-United Nations Development Programme (UNDP) projects are currently being prepared for submission. They concern the management of the Movile Cave and it’s associated ecosystems and biodiversity conservation in the proposed Ramsar site of the Lower Prut River. In 2000 Bulgaria, the Republic of Moldova, Romania and Ukraine created a “Green Corridor for the Danube”, with the support of the Worldwide Fund for Nature (WWF). This initiative is incomplete in comparison with Danube Environmental Programme signed in 1995 by riparian countries. For this reason Romania will respect Danube Environmental Programme.

Since 1999 several projects have received support from the EU programme LIFE. They have a total cost of over US\$ 4.3 million and are usually 75% co-financed by LIFE (maximum). The projects are in the conservation of nature and biological diversity.

Romania participates in the “Implementation of a national biosafety framework in the pre-accession countries of Central and Eastern Europe” project, running from 1999 until 2002. The project is financed by the Netherlands through its MATRA programme and aims at establishing a national framework in accordance with EU legislation as well as with the Cartagena Protocol on Biosafety to the Convention on Biological Diversity.

The most important action toward the creation of a network of protected areas and bio-corridors is the drawing up of a CORINE biotope list. The programme for establishing a Green Corridor for the Danube is a more concrete initiative. The Green Corridor Programme comprises the lower Danube flow and was initiated by Romania, together with the Governments of Bulgaria, the Republic of Moldova and Ukraine. This will be the largest transboundary wetland protection and restoration attempt in Europe.

Transboundary pollution by accidents: In 1992, the EU with PHARE/TACIS started the Environmental Programme for the Danube River Basin, according to which Romania developed a national plan.

International working groups were sets up to address several important issues, such as the transnational monitoring network or the accident emergency warning systems. Complementary to the Environmental Programme, the UNDP-GEF-funded Danube Pollution Reduction Programme was implemented.

Several successive fact-finding missions were undertaken by UNDP and WWF, as well as by the United States Agency for International Development (USAID) and Environmental Protection Agency (USEPA). UNDP started a project for the co-ordination of environmental emergency measures in Romania after the accidental spills. It also organized a training workshop on the management and prevention of water pollution incidents in the Somes-Tisa region for experts from government and from pollution hot spots. A UNDP-GEF project proposal on “the accelerated implementation of environmental management programmes for mining-related “hot spots” in the Somes-Tisa catchments area of Romania is in preparation.

Transboundary river basins, Danube and the Black Sea: Some hydro-technical projects are co-funded through grants from the PHARE-Cross Border Cooperation programme, such as in the Cris, Tisza, Tur, and Barcau river basins. To address the problem of eutrophication in the Black Sea, two GEF-UNDP project proposals on nutrient reduction measures (for the Danube and Black Sea basins) are pending. GEF-World Bank is currently supporting an agricultural pollution control project in the area of Calarasi, to reduce nitrate inputs into the Danube and the Black Sea.

Transboundary air pollution: In order to achieve the transposition of environment acquis communautaire – air quality and control of industrial pollution sectors, in 1999, the MWEF, with the support of Danish Environmental Protection Agency (DEPA), elaborated “The Sectoral Approximation Strategy for Air and Climate Change” and “The Sectoral Approximation Strategy for Industrial Pollution Control”. The implementation of relevant EU norms is planned to be achieved gradually until 2007. A transboundary project is currently being implemented together with Bulgaria by the MWEF with PHARE-Cross-Border Co-operation support to set up a joint air quality monitoring system in four towns in Romania and Bulgaria.

Waste management projects: The National Environmental Action Plan contains 5 projects subdivided into 56 sub-projects on industrial and municipal waste management in different counties.

Status: *Air pollution:* Since 1989 air emissions in Romania have dropped sharply. Emissions of the major common air pollutants (SO_x , NO_x , NH_3 , PM, VOC) from stationary sources have decreased by about 40% and from mobile sources by about 20%. SO_x emissions from stationary sources have decreased by 32%, NO_x by 51%, CO by 23%.

Lead emissions from mobile sources decreased by 17% due to the step-by-step introduction of unleaded petrol over the 1989-1997 period. However, limits of lead in the air, established by the World Health Organization, have been exceeded in various residential areas.

Climate change: After 1989, emissions of greenhouse gases dropped significantly due to the fall in economic activity. Emissions of greenhouse gases decreased on average by 37% during the 1989-1997 period.

Romania committed itself to an 8% reduction in emissions in the period 2008-2012 as compared to the reference year, 1989. Romania has considerable potential for projects in the framework of joint implementation (article 6 of the Kyoto Protocol). According to specialists' forecasts, it would be possible to achieve more than 6% reduction in greenhouse-gas emissions at least, on top of Romania's 8% commitment. Protection of the Ozone Layer: Romania has cut its annual consumption of ozone-depleting substances (ODS) to 1,069 tons. A national action plan and a country programme to phase out ozone-depleting substances (ODS) were drawn up, and the country programme is currently being updated. Romania is committed to cutting its ODS emissions to zero between 2005 and 2015.

Romania regularly reports to the Secretariat of the Vienna Convention and the Montreal Protocol.

Biological Diversity: Landscapes and ecosystems: The bio-geographical position of Romania, as well as its geology and pedology, relief and cultural history, result in a high diversity of landscapes and ecosystems. In total 52 eco-regions can be found in Romania, with a large diversity of terrestrial and aquatic ecosystems specific to the coastal and littoral zone of the Black Sea, e.g. steppe, forest steppe, hill, mountain, dry areas, wetlands (including the Danube Delta, rivers and lakes). Natural and semi-natural ecosystems represent 47% of the whole territory. The larger part of Romania's nature is well preserved especially mountain forests and wetlands. Mountains, hills, flatland wetlands and coastal landscapes represent complexes of natural, semi-natural, secondary natural, agricultural and other anthropogenous ecosystems in different proportions. Mountain forest areas and the alpine zone are the most natural landscapes owing to their very limited accessibility.

Forests: Forests (6.3 million ha) and wooded lands (0.3 million ha) make up 28% of the country's total territory. The forests in Romania are not evenly distributed throughout the territory. More than half (58.5%) is in the mountains (700 m or more above sea level), 34.8% are in the hilly region (150-700 m above sea level) and only 6.7% in the plains (less than 150 m above sea level). Conifer species represent almost a third of the forest trees (30.8%), and deciduous species 69.2%. The forests in Romania are classified into two groups: forests with special protection functions (52.7% of total forest area) and forests

for mainly economic exploitation (47.3%). Forests surrounding cities and other settlements fulfill recreative functions.

Species diversity (Flora and fauna): Due to its bio-geographical position and rich ecosystem and habitat diversity, Romania has a rich flora and fauna. More than 37,500 species have been recorded on the territory, of which 3,700 are plant and 33,802 animal species. Romania's flora and fauna are characterized by a high degree of endemic, sub-endemic, relict and rare species. Another asset of Romania's biodiversity is that it can boast many viable and rich populations of different species that are very rare in Europe. Beside many plant species and virgin forests, the largest and healthiest populations of large carnivores in Europe are located in Romania. About 40% of the European wolf population is in Romania, 60% of the brown bear population and about 1,000-1,500 lynxes live in the Carpathians.

The large number of bird species results from the fact that east Romania (Moldavia, Dobrodja) is on one of the most important bird migration routes to the south (Greece – Nile valley). Red-breasted goose (*Brantaruficollis*), swans (*Cygnus* and *Cygnus olor*), black stork (*Ciconia nigra*), pelicans (*Pelecanus crispus* and *Pelecanus onocrotalus*), glossy ibis (*Plegadis falcinellus*) and others use this route. Crane (*Grus*) and passerine birds use other east-west routes. The Danube delta and the Black Sea coast offer extraordinary resting and feeding places for migrating birds.

Protected areas: There are 827 natural protected areas in Romania, which represent 5.8% of the territory, according to recent Law No. 5/2000 (i.e. section III of the Law on National Spatial Planning).

Three of the protected areas are in the UNESCO-Man And Biosphere (MAB) Reserves Network: the Danube Delta Biosphere Reserve (since 1990), the Retezat National Park (the oldest national park in Romania, established in 1935 and on the MAB list since 1979) and the Rodna National Park (since 1980).

Waste: Mines, industry and municipalities are the main generators of waste. From 1995 to 1999, mining waste was reduced tenfold (from 301 to 35 million tons), while industrial waste shrunk from 51 to 34 million tons. The reductions are fully linked to the economic decline and to the reduction in production. Municipal waste has remained fairly stable at around 6-7 million tons per year. The composition of waste varies according to the region and the time of year.

Capacity Building, Education, Training and Awareness-Raising: Access to information is a constitutional right in Romania (art. 31.1 of the 1991 Constitution). The Law on Environmental Protection (No. 135/1995) republished, which establishes the general framework for policy, provides a specific right of access to information on the quality of the environment.

Romania ratified the *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environment Matters*, signed at Aarhus (Denmark) in 1998, through Law No. 86 of 22 May 2000.

The creation of a legal and institutional framework to foster dialogue between the authorities and civil society on environmental strategy, policies, programmes and decisions and the social and economic development of Romania was one of the medium-term priorities in the National Environment Action Plan approved in 1999. With the ratification of the Aarhus Convention, this legal framework has now been officially established and the main issue now is just how to make use of it.

Information: <http://www.mappm.ro>.

Financing: *Main international donors and partners:* European Union - the oldest pre-accession programme, PHARE, has been of major importance for Romania in the past few years. PHARE is still gaining importance and between 1998 and 2000 the MWEP implemented projects co-funded by PHARE-Environment, PHARE-Cross-Border Co-operation and PHARE Multi-Country. As part of this co-

operation, two “twinning projects” are being implemented jointly with France (water quality) and Germany (waste management).

The new pre-accession programme, the Instrument for Structural Policies for Pre-Accession (ISPA), is aimed at the development of transport and environmental protection infrastructure (waste, water and air infrastructure), in order to support the implementation of the relevant EU directives requiring large investments. For environmental infrastructure (wastewater, waste management and air pollution), grants of €120 million per year will be available for Romania, from 2000 until 2006. Grants of the same amount are available in the transport sector and will be managed by the Ministry of Transport. Twelve projects involving the towns of Piatra Neamt (solid waste), Constanta (waste-water), Iasi (waste water), Craiova (waste-water), the Jiu Valley (waste-water), Arad (waste water), Braila (waste water), Cluj Napoca (waste water), Oradea (waste water), Focsani (waste water), Timisoara (waste water) and Targu Mures (waste water), totalling €521,9 million have already been approved by the ISPA management committee and will be co-financed by ISPA.

The EU Special Accession Programme for Agriculture and Rural Development (SAPARD) aims to help solve problems of structural adjustment in the agricultural sector and to implement the EU body of law concerning the Common Agricultural Policies. It will run until 2006. On the Romanian side, SAPARD will be managed by an independent SAPARD implementing agency, which has been created within the Ministry of Agriculture.

Romania is participating in LIFE-Nature and LIFE-Environment programmes in their third phase (2000-2004).

International Financing and other Institutions: The European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB) were identified by the MWEP as suitable partners for providing loans for co-financing under European Union programmes. So far, the World Bank has not provided any major loans for environmental protection projects in Romania, but some large industrial projects do include environmental protection aspects, such as the rehabilitation of the petroleum industries, the rehabilitation of the power sector, and the restructuring of the mining sector. In co-operation with the MWEP, the World Bank has been implementing three important projects with GEF grants for the conservation of nature and of biological diversity. The GEF-World Bank granted project on agricultural pollution control has been negotiated and will enter, after the signature of the Grant Agreement, in its implementing stage.

Global Environment Facility: Besides the funds provided by the European Union, the Global Environment Facility (GEF) is a major international donor providing grants to Romania. Several projects, mainly in the focal areas of biodiversity and international waters, have been implemented through UNDP and the World Bank. In the period from 1998 to 2000, the MWEP managed GEF-supported projects of a total value of about US\$ 15 million.

USAID - ECOLINKS, an initiative funded by USAID, is offering small grants to private companies and municipalities. Through its country office in Bucharest, REC is currently managing and implementing the ECOLINKS programme. Ministry of Waters and Environment Protection collaborates closely with USAID. USAID ensure financial support for the project regarding environmental policies (EPIQ). The main components of the project are environment compliance strategy, environment-financing strategy, self-financing of Environment Protection Inspectorates, Environmental Fund, and Environment Economic Instruments. All components are underway.

UNDP is an active partner in environmental protection. Ongoing projects in Romania include the GEF-funded project (US\$ 2 million) on capacity building for greenhouse-gas emission reduction through

energy-efficiency improvement, which is implemented in co-operation with the Ministry of Industry and Mineral Resources, and the Romanian Agency for Energy Conservation. Another ongoing project is the building of local capacities to implement the Local Agenda 21.

Bilateral donors: During the past five years, the MWEP has managed over 50 projects for a total value of some US\$ 50 million. Individual countries provide aid and assistance for these projects. Projects funded by Denmark include the drawing up of two sectoral strategies for EU approximation on 'air quality and climate change' and 'industrial pollution control and risk management' and further assistance in the transposition and implementation of EU legislation on air pollution. The Netherlands offers assistance through the MATRA Programme and PSO (Association for Personnel Services Overseas) scheme. Japan, Switzerland and Norway are also involved in projects managed by the MWEP. Austria is co-operating with the Ozone Unit on projects concerning the protection of the ozone layer and Danube Programs.

Cooperation: *Objectives of International Cooperation:* The Environmental Protection Strategy was updated in 2001 and contains short, medium and long term objectives for environmental cooperation in environment protection, which can be summarized as follows:

- Romania aims to strengthen its institutional capacity through participation in environmental agreements and through bilateral, regional and multilateral cooperation;
- The legislative framework will be strengthened the harmonization of national legislation with EU legislation, with objective of becoming a member of the European Union and with the international conventions in the field of environment; and
- International funding and technical assistance will be attracted to accelerate the implementation of environmental protection policies.

MWEP and the National Environmental Action Plan: In 1995, following the 1993 Lucerne Ministerial Conference on Environment, the Ministry of Waters and Environmental Protection drew up a National Environmental Protection Strategy and the National Environmental Action Plan (NEAP) with the technical and financial support of the Danish Environmental Protection Agency (DEPA) in co-operation with the National Research Development Institute for Environment Protection (ICIM). The NEAP was presented to the Ministerial Conference 'Environment for Europe' in Sofia in October 1995. Before the Romanian Government approved it. *Romania's NEAP includes concrete measures required by bi- or multilateral environmental agreements, and its objectives comply with the provisions deriving from them.*

Co-operation on global environmental issues: Climate Change: Romania ratified the United Nations Framework Convention on Climate Change in 1994 and ratified the Kyoto Protocol in 2001. A National Commission for Climate Change was established by government decision in 1996. National Commission is chaired by the Minister of MWEP and is inter-ministerial.

Romania is a Party to the Vienna Convention for the *Protection of the Ozone Layer*, the Montreal Protocol and its London amendment. The Copenhagen and Montreal amendments have already been transposed into national law in 2001 (Law no 9/2001 and Law no 150/2001). An Ozone Unit was created as the national focal point within the MWEP's Department of Environmental Protection, with the financial support of the Multilateral Fund under the Montreal Protocol.

Romania became a Party to the Convention on *Biological Diversity* in 1994. In 2000, Romania ratified the Agreement on the Conservation of Bats in Europe (EUROBATS, 1991), the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS, 1996) as well as the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA, 1995). Romania is a Party to the Bonn Convention on the Conservation of Migratory Species of Wild Animals and to the Ramsar Convention on Wetlands of International Importance

Especially as Waterfowl Habitat and the Bern Convention concerning the fauna and flora and their habitats. The *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) was ratified in 1994. The Convention is implemented by a ratification law and by a ministerial order. Romania is currently implementing the relevant EU legislation. Co-operation with the General Directorate of Customs and the other ministries has been established. The MWEF issues the permits and certificates. The country is also Party to the *Convention to Combat Desertification*. According to the definitions of the Convention, there are some areas that can qualify as “affected areas”, e.g. in the Southeast of Romania, which consist mainly of crop fields. Desertification is therefore seen mainly as an issue of drought control. Romania has the status of “other affected country” under the Convention and has submitted a national report to its Secretariat.

Chemicals and waste: Romania ratified the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* in 1991. In the late eighties and early nineties, Romania experienced serious problems involving imports of hazardous wastes. The cases were solved in co-operation with the states involved, and the hazardous wastes were re-exported, following the principles of the Basel Convention. Romania is currently developing a new legal document to regulate the import, export and transit of wastes. The document will implement the new annexes VIII and IX to the Basel Convention (lists of wastes). Romania intends to ratify the “ban amendment” to the Basel Convention, which prohibits all exports of hazardous wastes from annex VII countries (OECD, EU, Liechtenstein) to other countries.

Romania has neither signed nor ratified the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. With regard to the issue of persistent organic pollutants (POPs), there are several sites with stocks of PCBs and PCB-containing equipment in Romania. A government decision on the management and control of the effects of PCBs and other similar components was adopted in 2000, in order to implement the provisions of the EU Council Directive on the Disposal of PCBs/PCTs. Romania participated in the negotiating process for the new international Convention on POPs and signed it this year in Stockholm.

Regional and bilateral co-operation: Transboundary pollution by accidents: In 2000, there were several environmental accidents in Romania. The most serious was the Baia Mare cyanide spill, causing considerable transboundary pollution. In response, the UNEP/OCHA Joint Environment Unit – Disaster Response Branch organized an international rapid assessment mission to Romania, Hungary and Yugoslavia. Its recommendations included further risk and environmental impact assessment of the regional industries, emergency planning (according to the APELL process) and increased international co-operation to prevent and respond to emergencies.

ROMANIA INTENDS TO DEVELOP A HARMONISED TRILATERAL PLAN FOR EMERGENCY RESPONSE WITH HUNGARY AND UKRAINE, FOR THE RIVERS WITHIN THE UPPER TISA RIVER BASIN. ROMANIA HAS NOT RATIFIED THE UNE/ECE CONVENTION ON THE TRANSBOUNDARY EFFECTS OF INDUSTRIAL ACCIDENTS. IN THE CASE OF THE BAI A MARE ACCIDENT, THE EARLY-WARNING SYSTEM IMPLEMENTED UNDER THE CONVENTION ON COOPERATION FOR THE PROTECTION AND SUSTAINABLE USE OF THE DANUBE RIVER WAS USED IN ORDER TO NOTIFY THE DOWNSTREAM AUTHORITIES.

Transboundary river basins, Danube and the Black Sea: Romania lies in the lower Danube basin, and shares several other transboundary river basins up or downstream with Hungary, the Republic of Moldova, Ukraine and Yugoslavia. Romania is a Party to the UN/ECE Convention on the Protection and Use of Transboundary Waters and International Lakes, which is complemented by regional and bilateral

agreements, as well as to the Convention on Co-operation for the Protection and Sustainable Use of the Danube River.

Romania has signed bilateral agreements with its neighbors Hungary, Ukraine and Yugoslavia on cross-border water management, which mainly address hydro-technical issues. The national Water Company, Apele Romane, has signed a memorandum with its counterpart in the Republic of Moldova concerning the Prut River. A hydro-technical agreement is in preparation.

Romania is a Party to the Bucharest Convention on the Protection of the Black Sea against Pollution, which entered into force in 1994. In the framework of the GEF-funded Black Sea Environmental Programme, the riparian States adopted the Strategic Action Plan for the Protection of the Black Sea in 1996. The International Commission for the Protection of the Black Sea and its secretariat, which is to be established in Istanbul, Turkey (to replace the Programme Implementation Unit), are still without sustainable funding.

Transboundary air pollution: Romania ratified the UN/ECE Convention on Long-range Transboundary Air Pollution in 1991. Furthermore, Romania has signed the Protocols (i) on Heavy Metals, (ii) on Persistent Organic Pollutants; and (iii) to Abate Acidification, Eutrophication and Ground-level Ozone, which have not yet entered into force. Romania did not sign the Protocols (i) on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent, (ii) concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes, or (iii) concerning the Control of Emissions of Volatile Organic Compounds or Their Transboundary Fluxes.

Environmental impact assessment and public participation: Romania signed the UN/ECE Convention on Environmental Impact Assessment in a Transboundary Context in 1991 and ratified this Convention through the Law no 22/2001.

In 2000, Romania ratified the UN/ECE Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. According to the European Commission, additional secondary legislation is needed to ensure implementation of these provisions. Non-governmental organizations are asking for better access to information and for more consultation in inter-ministerial working groups, such as the one for NEAP co-ordination or EU approximation. On 9 October 2000, Romania signed a bilateral agreement with the European Environment Agency (EEA) to participate in its activities until full accession. The co-operation between Romania and the European Environmental Agency has developed through reports on the Environment State, on the basis of the questionnaires provided by the Agency.

Other bilateral co-operation agreements: In 1996, Romania concluded a bilateral agreement with Hungary on co-operation in environmental protection, concerning, for instance, the exchange of information, cross-border monitoring and joint projects. In 1999, another agreement on forestry was concluded. An agreement on co-operation on environmental protection was already signed with Bulgaria in 1991 and ratified by the Parliament of both countries. The MWEP has signed a general arrangement on ministerial co-operation on the environment with its counterpart in Germany, Denmark, Dutch, Slovakia, Turkey, Venezuela, France, Israel, Switzerland and Republic of Moldova.

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

See information in the previous **Chapter 2**.

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CHAPTER 3: COMBATING POVERTY

Decision-Making: The Ministries of: Labor and Social Solidarity, National Agency for Employment; and the Development and Prognosis (MDP) are responsible for social protection. MDP mainly promotes and coordinates at national level the regional development policy. To this purpose, it draws up the project of the National Development Plan and assistance programmes for the regions in order to ensure the financial means necessary for restructuring the regional economies. MDP also provides the financial and technical management for the National Fund for Regional Development. The broad objective of the preliminary National Development Plan (NDP) for 2000-2002 is to reach the complex objective of the economic and social cohesion, achieve sustainable economic growth and create permanent jobs. To this end, priorities were established and on their basis, programmes and projects have been elaborated and in process of being implemented. Combating poverty was not settled as a priority by itself, but fulfilling the development priorities, such effect is expected to be achieved. Presently, the drawing up of the NDP for 2002-2004 is in progress. The general objectives of the social reforms are to maintain a certain balance between: resources and needs; reform measures and the maintenance of existing systems; protection and self-protection; and the needs of today generation and those of the generations to come. Social practice demonstrated that limited natural resources reduce the capacity to promote social policies with social protection remaining inappropriate with regard to needs.

Programmes and Projects: National Agency for Employment has an ongoing Action Programme of increasing the employment rate in 2001. Its objective is to find jobs for 174,751 persons through: job-matching services for both the unemployed (according to the available vacancies, 44,293 persons) and jobseekers through the Job Fairs (40,228 persons); creating new jobs through SME's crediting, according to Law No. 1/1991 re-published, 19,506; providing incentives to employment of graduates, (according to EOG No.35/1997, 20,058); training/retraining courses for searching employment (28,482); active measures for fighting unemployment for persons collectively laid-off, financed out of a World Bank loan (3,846); natural persons authorized to carry out independent activities (11,648); persons concluding contracts with block associations (2,768); and other actions to be taken at county level, 3,922. These are envisaged for the following target groups: women (24,080); youth (26,531); long-term unemployed (23,262); disabled persons (1,148); over 18 year-old graduates coming from social care institutions (2,295); persons freed after detention (655); Roma ethnic minority (3,725); and other categories (93,055). In addition, MDP implements a set of measures aiming at harmonious regional economic growth, leading to an increasing local and regional welfare and indirectly, combating poverty.

Starting with 2000, Romania receives financial assistance from EU by means of three financial pre-accession instruments: PHARE—the Economic and Social Cohesion Component, ISPA and SAPARD. For the PHARE Programme, MDP is the Implementing and Payment Agency, providing the financial and technical management. Through the Programme, the funds were allocated to the 1st and 2nd priority regions. 1st priority regions were defined as the regions with complex development problems (high rates of structural unemployment, great dependency on the agricultural activity, poorly developed technical and social infrastructure), where benefited from the entire EU allocated amount. The other regions, 2nd priority, have benefited from the sums from the national budget, which should have represented Romania's co-financing of the projects implemented in the 1st priority regions, as convened with the European Commission.

The strategy of the National Development Plan has nine strategic priorities, amongst which are: *Human Resources Development* in the context of industrial restructuring, aiming at developing people's working

abilities and adjusting them to structural changes to encourage future economic growth, facilitate access to employment, improve the employment possibilities of marginalized groups, and contribute to social inclusion; assistance to small and medium sized enterprises, aiming at fostering investment for the establishment of new enterprises and the development of existing micro and young enterprises; and local and regional infrastructures, aiming at developing infrastructures that support business development, in order to strengthen competitiveness of SMEs through better access to technologies, services, markets and information and to rehabilitate degraded sites. For Human Resources Development, support is concentrated on the following priority objectives: qualification and re-qualification of the work force in order to make it more respondent to the evolving needs of the labour market; enhancement of active employment measures as systemic tool to foster employment; and promotion of social inclusion for disadvantaged groups. The overall objective of PHARE 2001 Programme is to support the Romanian Government to implement an integrated multi-annual regional development policy through investment projects in priority sectors, in order to enhance the indigenous economic and social potential of the identified target areas facing severe industrial restructuring and demonstrating potential for economic growth, in line with the provisions of the National Development Plan and in close correlation with the institution building support provided for designing national economic and social cohesion policies in line with the EU policies and practices.

The achievement of the wider objective will be attained through an integrated set of measures, with the following specific immediate objectives: *assistance to small and medium sized enterprises*: to foster investment for the establishment of new enterprises and development of existing micro and young enterprises in order to increase the overall contribution of Micro, SMEs to the creation of employment and sustainable economic growth in the targeted zones; to support investment in existing SMEs in order to create new jobs in the targeted zones and develop, diversify and improve the quality and quantity of products and services offered; and etc. *Technical and Vocational Education and Training (TVET)*: to support the rationalization and the modernization of the present TVET system, through a multi-annual investment programme; to contribute in reviewing responsibilities, governance and accountability mechanisms in the provision of initial TVET in line with the social and economic development as stated in the National Development Plan; to contribute in ensuring equal chances for all young people to obtain a good professional qualification at a level equal to European standards, by providing TVET which responds flexibly to the needs of each individual.

Social Services investment scheme: to develop the capacity of the social assistance system in Romania to respond to the needs of the citizens by creating appropriate community social services for vulnerable groups in areas facing social-economic difficulties, including reorganization and rehabilitation of selected hostels for elderly persons and development of home care services for elderly people; to support social inclusion, poverty reduction and effective labour market integration of the vulnerable social groups in the 11 target areas undergoing severe industrial restructuring; to strengthen the capacities of regional and local administrations to build effective and innovative local partnerships in implementing social service initiatives;

Regional/large-scale infrastructure: to develop infrastructures supporting business and tourism development, in order to strengthen competitiveness of SMEs through better access to technologies, services, markets and information; to rehabilitate degraded sites or to protect environmentally vulnerable sites with economic potential (industrial sites, closed enterprises from urban heavily polluted areas, natural sites and area with tourist potential), with particular attention to the remediation of the severely condemned industrial sites;

Small-scale local infrastructure scheme: to improve the local infrastructure, in order to increase the attractiveness of the urban areas for inward investment, to rehabilitate the urban environment and increase

the quality of life of communities suffering from industrial restructuring; to rehabilitate the historical and cultural built heritage, in order to improve the tourism and business attractiveness of the urban areas. The social services scheme is aimed at preventing the social exclusion of vulnerable members of communities and will include the following types of activities: development and improvement of local community implemented projects, in the industrial restructuring areas, able to provide social services for vulnerable groups: social canteens, night shelters for homeless, temporary shelters for young persons leaving institutions, home care services, day care centres, day clubs and respite centres, centres for social recovery and rehabilitation, home services, protected workshops, temporary housing, day centres for people in need, centres for counseling, home-aid support, hot-line advice etc., including rehabilitation of the selected institutions and the endowment of the elderly care homes with specific equipment (medical, social, maintenance and rehabilitation therapy) for this kind of persons; and training for the unemployed in construction and building as part of a project for rehabilitation of selected institutions. The social services for vulnerable groups will be clearly targeted to elderly people in dependence situations, homeless, young persons who have drop-out school or left placement centres, unemployed families, single women with children in situation of extreme lack of living resources and other persons in difficult situations and/or living in severe poverty situations. This component of the programme will contribute to a reduction in the overall level of unemployment, through the creation of permanent and temporary employment in the 11 target regions, creating opportunities for new activities and new jobs in the social sector. The VET and the social services sub-components are developed in order to ensure equal opportunities to vocational education, training and social services of individuals and groups at risk/in need as mentioned above. The project will develop promotional and training activities at national, regional and local level to encourage girls and young women to follow technical careers through vocational education and training institutions, including business and administration careers. The partners involved in the project will include interested women/professional associations or trade groups.

In order to eliminate the disparities between the regions of the country, the Government MDP submits to the Government for approval special programmes for the economic areas with special status – disadvantaged areas, industrial parks, etc. The Governmental Emergency Ordinance no. 24/1998 modified by Governmental Emergency Ordinance no. 75/2000 settles down the regime of Disadvantaged Areas. The Government in 2000 has approved three special programmes for disadvantaged areas: the Programmes for: Business Development; Supporting Investment; and Supporting Agricultural Activities in Rural Areas (GD: 520/2000; 521/2000; and 522/2000). The programmes provide non-reimbursable financial assistance for the commercial companies with Romanian shareholders, agricultural associations or private entrepreneurs activating in disadvantaged areas and wishing to invest for developing their businesses or to start new businesses in one of the nominated disadvantaged areas of the country. Grants are limited to specific ceilings that depend on the programme's objectives, but they cannot exceed 75% of the total value of project investment.

Status: The PHARE 2000–Regional Development Programme is currently in the stage of preparation and/or selection of projects, the estimated date for concluding first contracts being the beginning of 2002. The PHARE 2001–Economic and Social Cohesion Programme is under approval procedure. The drawing up of the procedural and contractual framework is in the final stage. For disadvantaged areas, the special programmes are currently in progress. The entire process is managed by MDP, which is responsible for the signing of financial contracts. The projects carried out these areas also benefit from tax incentives provided by the law.

Capacity-Building, Education, Training and Awareness-Raising: Training/retraining courses are organized through the county agencies with the purpose of achieving new knowledge and skills needed to increase employability. There are also career counseling and information compartments within the county agencies, with the objective of increasing awareness and identifying actions, unemployed need to perform to achieve the status of employed person. To strengthen the institutional capacity for the implementation of an integrated regional development policy, both PHARE 2000 and 2001 Programmes include an Institution Building component, having as main goals: development of capacities of regional development agencies in each of the Romanian macro-regions as professional, legitimate and sustainable organizations that are capable of leading the socio-economic development process in their region and to prepare valid, mature regional development programmes and projects, including feasibility studies and detailed design, in line with regional development plans and strategies, with a view to financing by PHARE, national and regional budgets and other external sources of investments in the period 2001-2006; and development and implementation of national policies and programmes of social and economic cohesion on a multi-annual basis by strengthening the institutional capacity of central ministries of: Development and Prognosis (MDP); SMEs and Cooperation; Education and Research; and Tourism, the 8 Regional Development Agencies and relevant local authorities to prepare for implementation of the investment support to be provided. The PHARE 2000 Project Preparation Facility (PPF) will support the identification of the needs, constraints and potential for development, specific to the social services development sector, the most relevant target groups and their main needs and will assist the Regional Development Agencies in the identification of the priorities and specific objectives for each industrial restructuring area. The PPF should also provide a diagnosis of the existing development level of the social services providers and NGO sector.

Large awareness campaigns are related to every sub-component of PHARE project launching in order to disseminate through a diversity of channels the necessary information and materials to raise awareness of potential beneficiaries, to help them in the evaluation of needs and identification of the local target groups, and to ensure a transparent and competitive process of project selection. At the end of the programmes publicity will be organized to spread among the regions information about the results of the programme and the implemented projects. The implementation of the measures for supporting the development of the disadvantaged areas was also publicly announced, to raise awareness of the potential beneficiaries on the means of support and modalities to access it.

Information: This is accomplished by means of folders and brochures informing employers and jobseekers of the services the agency provides. Working together, coordinating actively, involving in the process the partners from different ministries is essential for the proper activity of MDP. In formulating the development strategies/policies and programmes for regional development, MDP collaborates with all line ministries technically competent as well as with the regional development agencies and the governmental and non-governmental agencies and institutions involved in the process. Statistical information is mainly provided by the National Institute for Statistics, which produces relevant data at regional level for demography, employment, income and consumption, living standards indicators, social infrastructure. It releases information on request or it issues special regular publications, such as: Co-ordinates of the Living Standard in Romania, Aspects regarding the quality of Living, Statistical Yearbook.

Financing: The Agency finances the following activities out of the Budget of the Unemployment Fund: new job creation through SME's crediting; incentives for the employment of graduates; training/retraining; active measures for fighting unemployment; payment of unemployment benefits and

of support allowance; and other activities intended to increase the employment rate. For PHARE 2000 Regional Development Programme, a 25% national co-financing for investment projects (equal to 25 Meuro) is provided from the state budget, corresponding with the PHARE contribution of 75 Meuro. Local co-finance is also requested, both from local public budgets (21.8 Meuro) and private (min. 40% of the project). PHARE provides the total budget of the Institutional Building component (13 Meuro). Through the PHARE 2001 Economic and Social Cohesion Programme, funds implementation will focus on sub-regional level, industrial restructuring areas with an economic growth potential, thus assistance being given to the localities affected by the economic restructuring processes, mainly the industrial ones. The Investment for Economic Cohesion Component amounts to 111.42 Meuro, the Romanian Government ensuring a 25% co-financing (26.42 Meuro) and 85 Meuro representing PHARE funds. There will be a local co-finance involved too, a minimum 10% requested from local public budgets and a 40% per project private allocation. The Institution Building Component amounts to 14.25 Meuro, PHARE funds. For implementing the special programmes for supporting development of projects in disadvantaged areas, the Romanian Government allocated from its Special Development Fund 168 million lei, each programme providing a 10% of the budget for technical assistance for implementation and 90% for non-reimbursable financial assistance. The projects located in the Disadvantaged areas also benefit for the incentives offered according to the law. The financial instrument to fulfill the policy of the disadvantaged areas development support is the National Fund for Regional Development, established by the provisions of the law no.151/1998 regarding the regional development in Romania.

Cooperation: National Agency for Employment cooperates with all governmental institutions, and with the NGOs whose objective is to increase the employment rate and to reduce the social impact of the lay-offs generated by the period of transition of the national economy. Promoting regional cooperation across its external borders is a priority for the European Union. The development of common projects is a key expression of this cooperation, helping both to create new opportunities for the areas concerned and to overcome some of the economic, social and political obstacles arising because of the existence of an international border. The willingness of the European Union and other international institutions to support Romania to take steps towards integration was unequivocally stated as well. It is now decisive for Romania to overcome its institutionally poorly structured economy, to put into operation new mechanisms, to promote clear-cut and coherent policies that should redirect social resources away from false goals, which have been using them uselessly, towards the authentic objectives of individual and overall welfare.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: There is no special governmental body responsible for this issue. The ministries of: Industry and Resources; Agriculture; Food and Forest; and other ministries plus governmental bodies are all involved. For example, the ministries of: Public Works; Transport; Housing; Education; and Research, National Office for Consumers Protection; National Network for Accreditation and Certification, Romanian Institute for Standardization, and Romanian Office for Legal Metrology have developed the sectoral strategies and policies concerning consumption and production patterns. In addition, certain territorial administrative structures promote these policies at a district level (ex: territorial branches of the Agency for Energy Preservation, District Agricultural Directorates, Counties Offices for Consumers Protection). Based on national legislation (Romanian Constitution, Law of Environment, Law of establishing and functioning of NGOs, Law of local administration) all Major Groups have access to the decision-making process for promoting sustainable consumption and production patterns.

There is no special law for sustainable consumption and production patterns, but there are many regulations in different sectors that encourage or constrain economical operators to pay attention to matters concerning sustainable patterns of production and consumption. Within economic sectors (industry, agriculture, tourism, transport, commerce, etc.) there is a dynamic process of alignment at the codes of good practice of ISO 9000 and ISO 14000 (ex: petrol industry, chemical industry). These codes are mandatory.

The National Strategy for Sustainable Development, National Agenda 21, drawn under the aegis of UNDP and Romanian Academy within the project ROM 015/95, coordinated by National Centre for Sustainable Development (NCSD), endorsed by the Government in 1999, and under development, has a special chapter concerning sustainable consumption and production patterns. Certain sectoral strategies, i.e. energy, industry, agriculture, and transport, also integrate policies and measures promoting sustainable production and consumption patterns. Specific issues addressed include: rational use of water resources by all sectors especially industries and households; increase of energy efficiency and raw materials in production; minimization of wastes resulting from production; promotion of reusing/recycling; use of clean technologies and products; and sustainable use of agricultural lands, especially using technologies assuring conservation of soils. Policy and economic instruments that are applied to discourage unsustainable and encourage sustainable consumption and production patterns include: taxes and penalties on exploiting biological and natural resources; taxes on use of all types of land except agriculture and forests; taxes for changing of forest land destination; penalties on pollution of waters; and taxes on lead petrol.

Programmes and Projects: Programmes to promote sustainable consumption and production patterns include: reducing gas emissions with greenhouse effect from the present levels, through increasing energy and material efficiency in production; and phasing-out Ozone Depleting Substances (ODS) and lead petrol.

National targets for enhancing energy and material efficiency, waste reduction, recycling, public transport and quality of life include: re-technologization of energy-intensive consumption and energy plants for termic and electric energy co-generation; promoting technologies, equipment, and products with low consumption of energy; awareness and technical assistance for consumers; regulations and standards for energy efficiency; financial and economic instruments to encourage rational use of energy; encouraging industrial and public transports that are energy-efficient and environmentally sound and life quality;

promoting building systems and highly energy efficiency technologies; promoting non-conventional energy sources and clean technologies; preventing, minimization of waste; reusing (packing, spare parts, industrial used waters); recycling of waste (paper and cardboard, glasses, metals, textiles, better, used oils); recovery of waste as energy resources; and technical and financial assistance to small and medium transport enterprises. In addition, industry uses reliable materials in manufacturing process, increasing the reliability of installations and providing spare parts and maintaining services during the entire life cycle of products. These measures are mandatory.

The country has major projects underway amongst which are: rehabilitating urban heating system and term-power plants using coals aiming at reducing noxious and CO-generation and electrical energy; deducing/reducing the gaseous emissions in industrial plants; rehabilitating the urban heating system; etc. Projects and activities that have had significant impacts in changing unsustainable consumption and production patterns are: producing gas without lead and electric energy on nuclear basis and reducing the one based on fossils combustibles; eliminating ODS in manufacturing refrigerating equipment for commercial or house use, and moos and cosmetics.

Status: The current levels of efficiency in the usage of energy, water and other materials by industries and households are: energy intensity for 1997 is situated at 1.939tcc/1000US\$GDP; the average specific brut consumption of heating for producing electric energy: 10,374 kJ/k Wh; thermo-electric power station using coal: 11,639; and thermo-electric power station using hydrocarbons: 8508. Average specific net consumption of heating for producing electric energy: 11,515; thermo-electric power station using coal: 13117; and Thermo-electric power station using hydrocarbons: 9151. In 1997, among total consumption of energy (64 million tcc), industry represented 57% and households 26%. In accordance with the National Strategy in the energy field, energetically intensity is expected to decrease by 2005: for industry with 22% and for population consumption, with 12.5%. There are no special statistics concerning the efficiency of water use in industry. There is a recirculation of the water, varying depending on industry and factories at 10-95%. In agriculture, the main water use is in irrigation, in which the efficiency of the water use ranges from 60 to 80%. The average specific water consumption per inhabitant per day in the urban area at the country level is about 513l: domestic use (294l); public use (70l); economic activities use (122l); and network losses (134l). In the rural areas, it is approximate 150l.

There is a real concern for the water losses reduction. On average, at the national level, the losses will decrease from 34% (in present) to 15% by 2020. Through the introduction of the real water prices, the economic units will have an incentive to reduce the losses in water supply and to increase the re-circulation and re-use of the water. The most pressing issues include the low level of investments and slow application of reforms in the national economy.

Capacity-Building, Education, Training and Awareness-Raising: Environmental protection has been introduced in education at all levels (preschool, school, high school, university and postgraduate). Several governmental and nongovernmental organizations and universities have also organized courses concerning sustainable consumption and production patterns. Programmes have been developed to train the people in the refrigeration industries on phasing-out ODS, and with international organizations, on such issues as environmental management systems. Specific awareness campaigns to promote sustainable consumption patterns have been organized by: professional organizations (AGIR—General Association of Romanian Engineers); AREN—Romanian Association for Nuclear Energy, RENAR; National Network for Accreditation and Certificate; SSNOM—National Scientific Association for Environmental Protection, SOROPA—Romanian Association for Air Protection; employers' organizations (Producers Associations of Chemical and Petrochemical Industry); and mass-media.

Information: Information is available at: Documentation Offices concerning various industrial sectors; the Center for Prevention of Industrial Pollution and the Documentation and Information Center for Clean Technologies and the Best Practice for Industry of Energy; Metallurgy, Chemistry, Materials for Constructions, and Machines Constructions Industry; National Center for Sustainable Development and in the future the Web Site will be open for this field. Indicators related to consumption and production patterns are addressed within the framework of the developing process of the national Agenda 21.

Research and Technologies: Clean and environmentally sound technologies are promoted and applied in production through: implementing an appropriate management based on legal framework; reorganizing and restructuring the economical sectors; refitting the industries; privatizing process and implementation of the free market's instruments; and developing and enforcing the economic and financial rate in the paper manufacturing sector and good manufacturing practices in surface treatment industry; re-circulating fluids and emulsions used; recovering metallic and non-metallic components; using substitution fuels in cement industry; on-site reutilization of effluent and the re-use of secondary products as raw material in chemical industry and reduction of chemical consumption and use of substitution products in the production process of electronics industry.

Financing: The national budget, private sector partnership and external assistance provide financing.

Cooperation: Romania's cooperation involves: World Bank the PHARE Programme, Global Environmental Facility, European Bank for Development and Reconstruction, and Multilateral Fund for Montreal Protocol and bilateral accords with Denmark, Holland Canada, Japan, and South Korea.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY

Decision-Making: The responsibility to coordinate energy issues with the following ministries of: Industry and Resources, responsible for policy and legislation on, amongst other things energy, fuel quality, off-road vehicles and petrol distribution and storage; Waters and Environmental Protection (MWEP), responsible for environmental policy (energy-related aspects of atmosphere) and legislation; Health and Family (MHF), responsible for deriving air quality standards to protect human health; and Public Works, Transport and Housing (METH), responsible for policy and legislation on transport including emissions. There are several technical organizations who support these ministries, i.e. Ministry of Industry and Resources is supported by: National Agency for Mineral Resources; National Agency for Regulation in Energy Field; National Agency for Regulation in Natural Gas Field; National Commission for Nuclear Activities Control; Romanian Agency for Energy Conservation and National Agency for the Development and Implementation of Reconstruction Programme in the Mining Zones. Because of the many organizations involved in the decision-making process a good communication is essential for effective implementation. An inter-ministerial working group was established for different issues and sectors, and brings together representatives from all of the main players. The local bodies of public authorities and the local governments participate in the decision-making process for the development and implementation of specific measures and projects regarding energy-related issues.

The Environmental Protection Law 1995 (EPL 137/1995) republished its chapter III, section 2, deals with "Atmospheric Protection" and establishes the MWEP as the competent authority for promoting regional and global policies in the sector. It also establishes the main duties of the MWEP including a duty to make and enforce regulations. The law places general obligations on natural and legal persons towards air protection and establishes penalties for non-compliance. There are a number of laws related with energy sub-sectors, including provisions for environmental protection. Also, there are a number of related Governmental Decisions establishing the constitution and responsibilities of several organizations and for a strategy to reduce the lead content of petrol. There are Ministerial Orders, which approve permitting procedures, technical norms, thresholds, type approval etc., and also a wide range of standards including standards for fuel, processes, monitoring methodologies, air quality standards and emission standards. Standards in Romania are not statutory unless a Ministerial Order or another legislative act approves them. Existing acts on these aspects: Environmental Protection Law no. 137/1995, republished; Law no.14/1997 ratifying Energy Charter Treaty and Energy Charter Protocol regarding energy efficiency and environment-related aspects; Law no.24/1994 ratifying the Framework UN Convention on Climate Change signed at Rio de Janeiro on June 5th 1992; Petroleum Law no.134/1995; Mining Law no.61/1998; Waters Law no.107/1996; Law no.111/1996, revised in 1998, regarding the nuclear activities safety; Governmental Emergency Ordinance no.63/1998 regarding electricity and heat; Law no.36/1994 regarding the founding of a Special Fund for Development of Energy System; Law (Sept. 2000) for energy efficient use; Governmental Decision 1275/1996 on the National Commission for Climate Change; Governmental Decision 856/1996 regarding energy Labelling for domestic refrigerators; Governmental Decision 489/1998 on the approval of the Action Plan for Decrease of Lead Content of Gasoline; Ministerial Order 756/1997 on the approval of the Regulation for environmental pollution assessment; Ministerial Order 462/1993 for the approval of the Technical Conditions on the atmosphere protection, Methodological Norms on the polluting emissions from stationary sources; STAS 12574/87- Air Quality in the protected area; SR 176/1997 – Motor oil lead less gasoline; SREN 590/1997 – Diesel Motor Oil; and SR 3339/1996, Energy Efficiency and Labelling, refrigerating electrical apparatus for domestic use.

Considering the importance of the energy sector in the frame of the national economy, the “Romanian Energy Strategy” was elaborated under the coordination of the Ministry of Industry and Resources, with targets until 2020, document adopted by the Prime Minister in June 1998. This document analyzed the current status of the energy system and established its objectives on long term. Examining the possible basic scenarios regarding the evolution of the national economy, the strategy is outlining the energy demand and the possibilities of supply, in accordance with the needs of rehabilitation and restructuring of the whole national economy, and with the integration into the European structures. “National Strategy for Sustainable Development of Romania,” drawn under the aegis of UNDP and Romanian Academy within the project ROM 015/95 and coordinated by National Centre for Sustainable Development (NCSD), was endorsed by the Government in 1999. In this framework, it was included a part dedicated to the field of energy. Supporting mentioned Romania’s Medium Term Economic Strategy, a Medium Term Energy Strategy was elaborated.

The general objective of the energy strategy of Romania is to satisfy the energy demand-corresponding to a modern economy and a civilized living standard -at the lowest price, observing the quality and supply safety standards and diminishing the environmental impact up to levels admitted in the European Union. Taking into account these prerequisites, the following objectives can be derived: promotion of renewable resources; clean technologies with low energy and material intensity; environment-friendly products; lower pressure of economic factors upon environment; and internalization of negative environment externalities.

Short and medium term goals concerning energy production and consumption in relation to environmental protection could be summarized in this way: promoting competition in the energy sector by founding internal electricity and gas markets in compliance with EU Directives; restructuring and privatization, unbundling of energy sector, setting up independent pendent authorities and founding market operators; decreasing of air pollution level and compliance with the emissions norms values established for SO₂, NO_x, dust and CO by: prevalent use of cleaner fossil fuels, nuclear energy and other renewable energy sources; use of fuel oil with low sulfur content, especially in the thermal power generation plants situated in urban and tourist areas; etc.

Regarding the petrochemical products: “white products,” gasoline and diesel oil will increase in the production structure; compliance of these products with the requirements of international regulations concerning the benzene and aromatic hydrocarbons content in the gasoline, and the sulfur content in oil diesel. The goal concerns the carrying out of Action Plan for reduction of polluting emissions from motor vehicles and phasing out of lead in gasoline. The compliance of technological process and products from motor vehicles building process with the requirements of European environmental regulation regarding black smoke and other different pollutants (CO, hydrocarbons, NO_x), noise level, traffic safety.

Major groups participating in decision-making concerning energy are mainly NGOs, local authorities, business and industry workers and trade unions. The private sector is involved yet only in oil and petroleum products sector, but Romania has programmes to privatize electricity, heat and gas sectors. The new legislation takes into account the role of the private sector. Like other industrialized countries, Romania has a developed civil society.

Programmes and Projects: There are programmes for development of natural gas networks, new investments for small and medium co-generation power plants, and also thermal plants. In compliance with the study “Strategy for Renewable Energy Sources in Romania,” realized with EU consultants in 1996, it was considered that the most promised is biomass. Accordingly, Romanian Agency for Energy Conservation in the framework of PHARE Programme developed a demonstrative project in this field. The project was realized in the town Campeni, and it was shifted oil products use with biomass. A similar

project was developed in Neamt County (village Tasca), with Danish financing support. Consequently, it was launched this year Romanian-Danish Cooperation Programme Sawdust 2000, for 5 projects in the first step.

In 1998 cooperation between MIR and ZECASIN Research Institute from Romanian part and British company Ashwell/CRE, for manufacturing in Romania under license special boilers up to 300 kW burning clean coal for heating was established. Due to the good results of experiments in Jiu Valley during 1999, a full support was obtained to produce such boilers from the British part.

The energy policies consider energy efficiency and energy recovery as short-term options for the reduction of greenhouse gas emissions. In this regard, documents prepared by the OECD for the Initiative of Energy Conservation are very useful for the holistic approach of the energy and environment. The Romanian Government supports the integration of the environmental policies in the energy policies and the implementation of the short-term measures based on the cost benefit criteria for the mitigation of the greenhouse gas emissions. Governmental Decision 489/1998 has approved the Action Plan for Reduction of Gasoline Lead Content. This Action Plan includes specific objectives and measures with timetable, involved organizations and estimated costs in order to: achieve the production and trading of unleaded gasoline; mandatory introduction of operational catalyzes for imported cars; mandatory introduction of catalyzes and unleaded gasoline for new types of domestically produced cars; and use of economic and fiscal incentives to promote "green" vehicles (fueled with unleaded gasoline).

Status: Urban households have 99% electricity, 58 % district heating, and 63% natural gas. Rural households have 94% electricity, 2% district heating, and 4% natural gas. In Romania, energy installations are old and this creates increased cost and losses hence, the government subsidizes heat and electricity for customers. On medium term (2005) it is intended to maintain the production of lignite, hard coal for electricity and heat production at present levels: 22-25 Mt/year lignite and 2.5-3 Mt/year for hard coal. Oil: Domestic oil production provides about 6 Mt/year. The electricity sector, including co-generation burns about 2 Mt/year heavy fuel oil, out of which 1.2 Mt is imported. Gas: Internal gas production is presently of about 14 billion cm³/year and declining. The electricity sector needs about 4 billions cm³/year, of which 1.5 billion is imported. Hydro: The present electricity production on hydro is on average of 17 TWh/year. Construction was started before 1990 for a large number of plants with a total 800 MW. Available investments allow on medium term completion of about 150 MW. Nuclear: Unit 1 of 700 MW at Cernavoda plant (Candu type) produces about 5 TW/year. There are reserves of fuel and heavy water for unit 2 of 700 MW, which is under construction. Romania is importing more than 50% of the oil and gas used in the economy. In 1999, the electricity generated by types of fuel was coal-32%; gas and oil fuel -21%; hydropower -36% and nuclear-11%. The trend for the future is to use more gas in energy generation, following the EU trend. For covering domestic needs, the import of resources will grow during the next 10 years. Maximum efficiency and minimal costs can be obtained by importing gas. Major decisions on long-term development will be taken by following the national and international evolution on fuel market, technology improvements and the power of our national economy. Romania will get involved in the European energy market (interconnection with UCTE, international gas and oil pipelines), but also on regional energy markets (Balkan market, Black Sea ring, etc.). Regarding air emissions, there has been a dramatic drop in emissions of polluting substances since 1989. This is largely due to the contraction of the economy during last period but also to some protection measures. The major sources of pollutants are: SO₂, thermo-electric plants and power plants (70%); NO_x, thermo-electric plants and road transport (60-65%); CO, industry and combustion (75-80%); CO₂ (greenhouse gas) the major sources are thermo-electric and industrial combustion (75-80%). Other negative impacts on the

environment are the result of: waste water discharge in drainage channels or in effluents; and complex impacts on air, soil and underground waters due to slag and ash dumps.

The areas which require the most immediate attention in improving environmental impact include: gaseous pollutants – Arad, Borzesti, Braila, Deva, Suceava, Turceni; and dust – Arad, Doicesti, Constanta, Deva, Paroseni, Rovinari, Suceava. Romania is a country in transition with a low PNB/ inhabitant, comparing the EU countries and other more developed transition countries. In some instances, our country rating is not so good to assure normal foreign investments.

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

Information: Regarding emissions self-monitoring, this is not a generalized system, but the energy-related industrial companies are undertaking actions to assure this requirement of Environmental Protection Law. For instance, in the energy sector, the existing devices carry out air pollutants monitoring: fixed devices, portable devices and mobile labs. These companies have also implemented the calculation model EMPOL (emission inventory) and DISPOL (for calculation and graphical presentation of pollutants dispersion in the neighborhood of thermal power plants area). This information is reported to environmental protection authorities and to the National Commission for Statistics and is made available to the public as: annual reports on environmental state; environmental reports of the industrial companies; annual meetings for staff with responsibilities in the field of environmental protection; participation in different international and domestic conferences and workshops; and mass-media and dissemination of information on the environmental protection activities. The energy companies have also a set of specific publications as ENERGETICA, IMPULS, PETROL si GAZE etc. Key companies in Romania have publicly presented each year environmental reports, which generally describe the environmental impact and management systems of these companies, different measures taken for impact mitigation, including international cooperation. For instance, “Environmental Report 1999” of National Electricity Company (CONEL) from Romania. CONEL realized, in 1999, more than 86% from national electricity output, and about 40% from heat output.

Research and Technologies: Improving firing equipment through adjustment to fuel quality, fuel injection systems and other adjustments to boiler operations; fuel switching from coal to oil and natural gas; fuel switching from carbon to non-carbon based fuels (hydropower, biomass); boilers improvements; turbine cycle improvement; waste heat recovery systems; installing co-generation and more efficient transformers; up grading and automation of distribution instrumentation and control; promoting energy-efficient electro technologies and the use of renewable energy (hydropower, biomass, geothermal, waste-derived fuels).

Financing: Energy investments are mainly financed by public domestic sources (energy companies’ funds, the national energy development fund, budgetary resources). A small part of investments is coming from foreign sources (BIRD, BERD, EU, BEI, etc.).

Cooperation: Based on a Romania-Japan Agreement, an integrated project is foreseen to be applied in Jiu Valley for modernizing of two coalmines and a processing plant, and also the thermal power plant Paroseni, which is supplied with hard coal from those mining units. Japanese and Polish banks, with Romanian state guarantee, will finance the project. Depending on the success of this project, other similar projects will be taken into consideration, especially in Oltenia lignite basin. The development and the rehabilitation of energy sector need the support of international cooperation. At institutional level,

fundamental is the technical assistance and know-how transfer. At companies' level, the accent is put on commercial and financial issues. Regarding the electricity, priority is given to UCTE inter-connection and Romania is strongly supported by EU, through the PHARE programme. Another priority is the reduction of cross-border pollution and promotion of the concept of joint-implementation. Romania has a joint-implementation Memorandum of Understanding with Netherlands to facilitate the development and implementation of emission reduction projects in our country. The main international cooperation directions are linked to the integration process to EU.

Relationship with neighbor's countries must be enhanced, mainly with Hungary and Bulgaria, who have also interested in EU. A special interest must be offered to Republic of Moldova, due to the special historical links that exist between the two countries. For lignite field in coal basin Oltenia, some cooperation were established many years ago for modernizing of the bucket wheel excavators, between National Company for Lignite Oltenia and German companies KRUPP and MAN-TAKRAFF. These companies deliver to Romania technical documentation for modernizing of certain sub ensembles and also will deliver some spare parts for the specific equipment.

The Romania's' commitment at the Kyoto Protocol has been to reduce the greenhouse gas emissions with 8% as compared to 1989. Until now we have developed Joint Implementation Activities under the framework of Memorandum of Understanding – Programme for economic cooperation between Romanian and Dutch Governments. The achievement of these activities will enhance the cooperation in this field, started in 1996 with the projects in power generation sector. A Romanian-Dutch Joint Implementation Programme including several projects is being prepared. To implement the provision of Montreal Protocol, several projects of industry sector were included in Country Programme for phasing out of ozone depleting substances, programme which co-financing – industrial companies –Multilateral Fund of Montreal Protocol, implement. Active participation in the task force “environmental management and related economic aspects” UNIPEDE/EURELECTRIC; Conclusion of the PHARE project on the environmental management in thermal power plants (conducted by GOPA/DECON-Germany consultants). Conclusions of the project on environmental management system in petroleum sector and first part of the project on environmental management system in hydro power plants, both developed with Canadian financial support; and Development of pilot projects on joint implementation activities with The Netherlands. Present legislation in mining and energy fields allows the access of foreign capital for energy resources exploitation by concessions of the coal deposits to private local or foreign investors. According to Mining Law, there are certain facilities in mining sector for private investors, and in the unfavorable affected mining areas, there are offered others facilitates for stimulating the creation of new jobs.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: Responsibility for coordination is with the Ministry of Public Works, Transport and Housing, which has attribution in management and improvement of the transport system. The Ministry exercises this attribution directly or by specialized technical organisms, public subordinated institutions specialized or commercial society authorized. For politics and legislation elaboration in national system transports, the Ministry of Public Works, Transport and Housing collaborates with the public administration and the ministries of: Industry and Resources; Waters and Environment Protection; Agriculture, Food and Forest; and Justice, and local public administration and other stakeholders (professional organizations, syndicates). Politics and legislation in transports field are elaborate in concordance with *Aquis Communautaire*. National legislations are approved by Parliament (laws) or Govern, and Ministry Order approves technical norms. Central and local public administrations are involved directly in decision-making. Professional organizations or association of employers are involved at different levels in the process of elaboration of the legislation, depending on its field of activity. During 1992-2000 Romania's legislation on transport has continued to: altering economic mechanisms in the framework of transition to the market economy; harmonizing legislation for EU accession; applying measures for environmental protection; and elaborating legislation for every transportation field. Emission standards adaptation and implementation are in conformity with EU stipulation and Romania gives import permits for vehicle in concordance with standards of pollution at European level. Generally, it is difficult to establish what field of transport is more pollutant. To reshape and develop a transport strategy, there are stipulations for measures to encourage the use of public passenger transport as opposed to private cars. The state grant, for some category of persons, government subsidy for public passenger transports. Public urban passenger transport and rail passenger transport are grant-in-aid. So far public passenger (civil society) isn't directly involve in elaboration of measures for environment-friendly transportation. The Ministry of Transportation elaborated in 1992 a development and reorganization of transportation strategy. This strategy was up-dated in 1994, 1996, and 1998 in concordance with EU requirements. It takes into account (in relation with general and specific purposes included also in "Position Document" regarding the transports policy) the continuation of the reshaping and ensuring the working of the national system of transport within efficiently conditions from economical and ecological point of view, at the same time involving the European integration process of transport. Ministry of Public Works, Transport and Housing has developed in the same period of time the reshaping strategy on land planning, urbanism, public works, and constructions. In 1996 it became a valid Law 71/1996 regarding the land planning-Section I, Lines of communication. In 1999 the Government of Romania approved the National Development Plan, elaborated under the coordinating of National Agency of Regional Development" through which there are integral treatment of all elements of regional development was assured. At the level of urban communities there are local strategies of development of the public systems, with road and railway vehicles and of transport infrastructure through the traffic within urban community and the links to national /regional infrastructures stipulated for Law nr.71/1996. The purposes on short and long term plans is to take into account the working of national transport system in efficiently conditions (in relation with National Sustainable Development Strategy) within the materializing of the concept of sustainable transport by: browning in functional parameters and utilizing of existing capacities by repairing and modernizing of infrastructures, installations and vehicles; rehabilitating national road net—694 km in 2000, 534km in 2002, 625 km in 2004 (By 2006 there is a set goal to realize about 500 km of high ways and surrounding roads for principal cities, Bucharest, Sibiu, Pitesti, sebes, Orastie, and Deva); developing capacities on certain sectors situated on the route of pan-

European corridors IV, VII, and IX, as well as in other sections defined in TINA net (Transport Infrastructure Needs Assessment); expanding combined and inter-modal transport using specialized rolling material, with high performances regarding energy consumption and the environmental impact; using “pro-ecological” vehicles with treated emissions and limited noise (EURO 1, EURO 2, EURO 3, EURO 4)—beginning 2001 the obligatory of EURO 3 norms (for the import of auto vehicles and by 2004 the obligatory for auto vehicle made in Romania) will be introduced (MO 566/2000) and EURO 4 for the terms which will be set further (this level will be applied in UE in 2004 – the type homologation and in 2005 – at the first registration; encouraging research and development in the field of reduced fuel consumption vehicles and alternative technology for transport; establishing environmental factors affected by pollution by the implementation of specific un-polluting technologies; and avoiding pollution by preventive measures; the traffic inspection and control of technical state of auto vehicles.

Groups and legal person (specialist) from universities, research-projection and production institutions participate in elaborating studies and research for transport legislation. Public opinions are made in the framework of debates in mass media. Regions, which have the greatest needs for an improved transport system, are North-East (Botosani and Vaslui county), South-East (Braila and Buzau county) and South-West (Dolj and Olt county). A special situation has Danube Delta and Apuseni Mountains. Rural population has the most urgent needs for an improved transport system. In rural area the government subsidizes public transport. Private sector participates actively in management of road, inland waterway and air transport. Private road transport sector owns 80% of the total number of vehicles from Romania and achieve 50% of the passenger transport and more 70% of the goods transport. In maritime transport field, in concordance with Low no.85/1997, maritime shipping companies are obliged to create and to present technical documentation of management system for pollution prevention. After that Ministry of Transportation issue Document of Conformity for company and Security Management Certificate for shipping. The state does not involve itself in the management process of commercial company.

Programmes and Projects: At the regional and local level administration, programmes are drawn for public transport. At the level of central administration (National Administer of Roads) in order to promote traffic efficiency, a set circulation restrictions are applied only for 3 national roads for goods vehicles with a maxim authorized weight bigger then 3,5 t, respective: DN 1–Bucharest-Ploiesti during the working days; DN 1– Bucharest-Brasov-Saturday, Sunday and during the working days; DN 2 Bucharest-Urziceni and DN 2A Saturday, Sunday and other non-working days in 01.06-15.09.2000.

In order improve the efficiency and optimization of vehicle circulation, there are 3 electronics databases containing ordering and vehicle offer of road transport operator and about 1200 sending offices. A percentage of 5 vehicles carry trailer and semi-trailer with reduced fuel consumption per ton loaded. With those are realized about 40% from total volume of the transport expressed in ton-km. Consequently, the alignment of the homologation norms of auto vehicles to those from the UE, for new vehicle carbon oxide emissions have been reduced 5 times, volatile organically compounds about 4 times, nitrogen oxide about 3 times. The obligatory of yearly checking of framing in pollution norms for the auto vehicles on duty also has been introduced. There is an integrating system of road education beginning with the school level and going on after the acquiring a driving – license for the corporate bodies which use drivers as employees. For professional drivers the hire and periodical examinations are foreseeing, both from medical and psychological point of view. The bettering of the quality and state of the infrastructure, a process being in progress in Romania, will also contribute for the reduction of accidents. In cities, local administration has set central zones with historical or commercial specific dedicated exclusively for pedestrian circulation. In the most of towns and small localities, walking is frequent for daily activities. There is an extended programme offering different types and models of bikes to the young population as a mode of transportation. In three cities there are projects proposal for building up some bike roads. In the framework of national programme of research and development “Horizon 2000,” transport has its own programme including 5

general objectives. At 2000-year level, in the framework of programme were 84 proposal themes and between 2001-2004 period, there is an estimate introduce 2000 themes. The objective has a principal target integration of Romanian transports in European system by macroeconomic politics, infrastructure development, new technologies, services and security in transports. These objectives are also part of the UE programmes (PHARE, COST, EURECA ISPA and TINA). There are some research programmes in 6 big Romanian towns for road systematization. Most important project is for Bucharest and is realized by Japanese experts.

Status: There is no tax system for vehicles with higher pollution levels. Lead free gasoline excise level is smaller than lead gasoline excise level. In Romanian, legislation, by a Governmental Ordinance no.97/1999, regulation 369R1191 CEE on public services. There is a good public urban passenger transport in urban areas as opposed to rural area where the demand is limited. In the field of good transportation, there is overbid in both areas (urban and rural). Romania has an infrastructure net (roads, railway, inland waterway, maritime and river ports, airports), which assure links by Romanian locality, and international transport infrastructure. Situation of infrastructure transport net is: Railway net has: 46,2km/1000km² density and cover all territory and ensure links with international railway net; 11.010km length; 1253 station and flag station; Road net has: 0,64km/km² and ensure access in all locality; 73.260km total length, from what 14.683km (20%) national road and 58.577km county road. From total national road net, 91% has modern cover, 8% light asphalt cover and 1% is paved; 4.508km is international road Inland waterway net has: 6,5km/1000km² and is situated in South and South-East of Romania; 1.609km length from what 1075km Danube, 91km internal waterway (Danube – Black Sea Channel and Poarta Alba – Navodari Channel). Are 35 waterways and marine ports. Air net is composed by international and national way that ensures links between foreigner airports and Romanian international airport (8 international airports) and national civil airports (17).

Ministry of Public Works, Transport and Housing does not establish norms of fuel consumption. Fuel consumption is commercial companies control distribution. For phase out the use of leaded gasoline, in Romania lead free gasoline excise level is smaller than lead gasoline excise level. Romania has, organized by Ministry of Public Works, Transport and Housing and separately by Ministry of Waters and Environment Protection, evaluation systems of pollution produced from road vehicles by local determination, in conformity with certain programmes. Because of old vehicles from vehicles on duty (30% has more than 15 years old) and bad upkeep, polluting emissions exceed unitary value emission from European Union, especially in urban concentration. Heavy vehicles are very pollutants, it represent 15% from vehicles on duty but give out 50% from pollutant emissions. Principal measures take of Governmental Decision no.81/2000, Ministry Order no.565/2000 and Ministry Order no.335/1998 are: Increase quality and impartiality of periodical technical inspection of cars by making in 650 authorized station under supervisor of the Romanian Auto Register; and Introduction, in 2001, of environmental technical inspection; Extension of traffic control for car and heavy vehicles, through equipping of the Romanian Auto Register with easy mobile laboratories and in perspective with heavy mobile laboratories (for lorry and bus). Number of controls in the traffic in last year is more than 17.000 and will be increase in near future. By Governmental Ordinance no.80/2000 and Governmental Ordinance no.82/2000, was established for: certification of components and machine part which contribute to road security and environmental protection; and evaluation by the Romanian Auto Register of technical capacity of the reparation shop and authorized only shop which guarantee good and quality reparation. In the future, imports or production of cars will be authorized in conformity with EURO 2, and started with 2001 in conformity with EURO 3.

Romania's mode of transport doesn't require most immediate attention in improving transport efficiency and reducing damages to ecosystems. The immediate goal should be to adopt measures to improve transport efficiency in the country. Major obstacles from adopting more efficient transport and traffic

systems are financial constraints. For example, in road transport, the key is replacing the old vehicles with new ones, but the costs are approximately 12 thousand millions EURO. Legislative framework promoted by Ministry of Transportation grant special attention for application of pollution norms and technical inspections for EU integration.

Capacity-Building, Education, Training and Awareness-Raising: A few cities organized “A day without cars,” when people walk or used only public transport. Romania does not have an organized mechanism to promote public awareness on the issues like the impact of car transportation, which is a destructive element to the environment due to pollution. The state subsidizes tickets to enhance use of public transportation. In the framework of road education, Romania TV and radio present aspects of security traffic in special emissions. Two national TV programmes have weekly road education on missions. Printed press presents daily information about most grave road accidents and periodically, situation of accidents in last week. Ministry of Public Works, Transport and Housing in collaboration with professional associations periodically organizes a syndicate, conveyor and Road Police, analysis and symposium concerning road safety. In framework of Ministry of Public Works, Transport and Housing, functions Inter-ministerial Security Road Councils with participation of high representatives of other ministry for policy making on security road.

Romania is taking measures to promote awareness of the relationship between transport and environment for example: through legislation, in Governmental Order no.890/1998 which stipulates the obligatorily for scholarship, at all levels, on road legislation and road security; A special handbook and illustrative materials are made available by the Ministry; and Organized “school patrol” with schoolboys. Periodically are organized competitions on road safety issues with schoolboys. Through perfecting centers under Ministry of Public Works, Transport and Housing (Personnel Perfecting of Civil Marine and Personnel Qualification for Port Operation Center; Personnel Perfecting of River Navigation Center) and other units under authority of Ministry of Public Works, Transport and Housing unfurl personnel perfecting programmes. In road fields, Ministry of Public Works, Transport and Housing authorized by 1994, two centers of professional formation for road transport. In the framework of these centers are organized programmes for road personnel in different fields: driver for dangerous goods transport; advisor for dangerous goods transport; manager for road transport; technical inspector; leader of maintenance and reparations activity; legislation teacher for drivers schools; and driving instructor for driver school.

Information: Primary information and methods used, in gathering information and maintaining a database related on road transport and traffic systems are managed by: National Road Administration – road traffic; the National railways Transport Company “CFR–S.A”; and Airports. At national level, National Statistics and Economic Studies Institute organize official statistics. Romania does not have an organized scientific data and information on vehicle emissions. Information on traffic conditions is collected and made readily available to the public by information offices and mass media. Information about road net is available to the public by National Road Administration or, in some instances, by Ministry of Public Works, Transport and Housing. On National Road no.1 (Bucharest–Brasov) an information system on meteorological conditions and the carriage road (RWIS) exists. Exist sensory in the carriage road, which measure speed and direction of the wind, the temperature, etc.

Research and Technologies: Romania has a project proposal for utilization of alternative sources energy (LPG, electric, solarium energy). However, only vehicles homologate for LPG utilization is materializing. For a more efficient traffic management can be realized in the following projects below:

PHARE: Transport and the Environment; Training center net; Circulation restrictions in legal holiday and weekend applied only for some national roads; and Road training programme for schoolboys, etc.

Financing: The main sources of funding are: General budget; International financial credits guarantee by the Romanian state; PHARE; ISPA; and other national funds. In development and reshaping transport strategy and in Governmental Action Plan are nominally projects and programme on transport infrastructure development and quality of connected services.

Cooperation: Ministry of Public Works, Transport and Housing participates in the framework of international organizations namely: European Conference of the Ministers Transportation; United Nations Organization; Danube Commission; Black Sea Economical Cooperation Organization; and International Maritime Organization. A good cooperation with Balkans countries, respective: Central European Initiative; South – East European Cooperation Initiative (SECI). In 1997, the minister of transportation concluded at Vienna (Austria) at Regional Conference of Transportation and Environment, Common Declaration and Common Action Plan. These measures are in course of implementation. In 1998, at Aarhus (Denmark), 4th Ministerial Conference in the framework of Environment for Europe Programme was preceded. At this conference the problems of reduction of lead emissions were discussed. In November 1999, at Sofia (Bulgaria), a conference on energy infrastructure, transportation, telecommunication and environment was held. All international agreement where Romania is a Part, are aimed at improving global transport systems.

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CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: Two levels of authority are responsible for decision-making: i) at central level several governmental institutions are responsible for strategically and tactical decision regarding sustainable development and at local level the local authorities are responsible for elaboration and implementation same specifically decisions related to “Agenda 21”; this is the general frame for local priorities identification and solving. The Ministry of Health was involved as a partner in the process of elaboration of the National Strategy for Sustainable Development in July 1999. Formal responsibility for the public health, including environmental health, is the responsibility for Ministry of Health (Law no. 100/1998). Implementation of the action is carried out in the framework of 36 “National Programmes,” established by this law. ii) At territorial level, 42 Districtual Directions of Public Health carry out the activities including public health surveillance, demography reporting and health promotion. The Public Health Directorate of the Ministry uses the scientific information provided by the Institutes as support for strategic decisions or discussions with the other sectors on the national level. Acting as technical advisor of the MHF four Institutes of Public Health (in Bucharest, Iasi, Timisoara and Cluj) and two Public Health Centers (Sibiu and Targu Mures) supervise the work of the Directions and act as territorial reference centers (with districts assigned to each of them).

Programmes and Projects: In the framework of the National Programme 26 for “Health evaluation and demographic surveillance” regularly reports on health status and demographic trends are produced at local level and analyzed and processed by the Institute of Public Health. Also an important role in informational processing has the Statistical Centre for Sanitary Statistics.

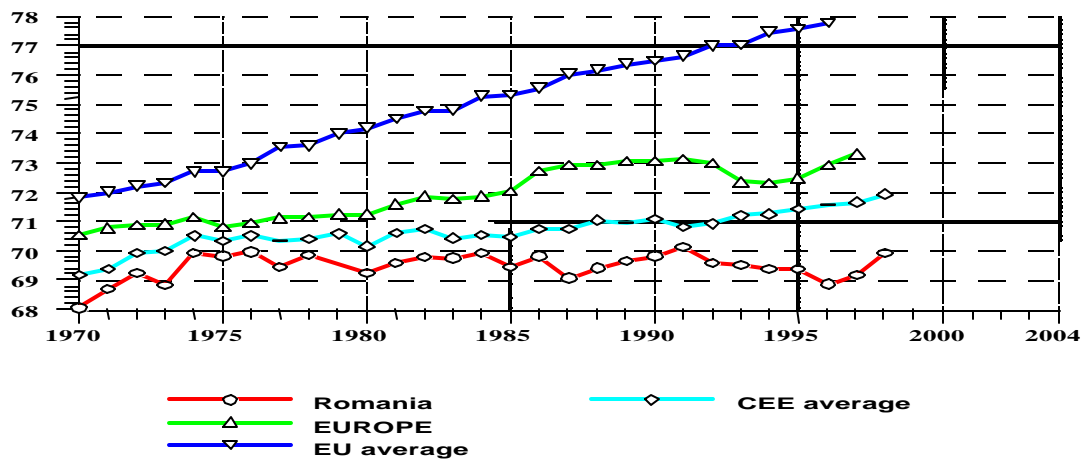
Status: Demographic and health characteristics of Romanian population are as follows: *Population dynamic:* The population of Romania is 22435205 million people in 2000, 3.2% less than in 1990, which is due to the negative natural growth (since 1992) and out-migration. The population is getting older, with the proportion below 15 years of age decreasing (from 23.6% in 1990 to 18.26% in 2000) and those 65 years of age or older increasing (from 10.4% to 13.3%, respectively). This dynamic of ageing is faster in Romania than in Central and East European Countries on average, with a faster approximation of EU age structure. However, the proportion of young people is still by 2% greater and of older by 3% smaller in Romania than EU average. 54,6% of the population lives in cities, and almost 10% are residents of Bucharest. This percentage of urban population is much lower than European average (73%). Average population density (94.1 people per sq. kilometre) is low, at the level of 87% of Central and East European Countries average, and 53% of EU average. In recent years, migration from urban to rural areas was higher than in the opposite direction.

Mortality: After a decline by more than 1 year over the period 1992-95, life expectancy increased again reaching 70.6 years in 1999. It is still one of the lowest levels in Europe, shorter than Central and East European Countries and EU averages by, respectively, 2.0 and 7.9 years. Within the country (for 1998-2000), the differentiation of life expectancy in the districts was rather small: from 63.26 to 68.88 years in men (Satu-Mare vs. Bucharest), and from 71.69 to 75.96 in women (Satu-Mare vs. Bucharest and Covasna). Infant mortality (20.5 deaths per 1000 live births in 1998 and 18.6 in 2000), though declining, remains at a very high level. In 2000, it was 1.6 times greater than Central and East European countries average and 3.5 times greater than in EU. Within the country, the rate varied from 12.2 (in Vilcea) to 28.3 (Bacau district) in 2000. Respiratory infections are leading cause of the infant deaths. In Bihor district, deaths due to digestive system diseases are 10 times more common than in the other districts (5.0 per

1000 live births, vs. 0.6 national average), contributing substantially to the high level of infant mortality in that district. The post-neonatal mortality (9.98/1000 in 1999) is also high in Romania, 1.9 times more than Central and East European Countries average and 5.5 times more than EU level. Post-neonatal mortality was twice as high in rural than in urban areas (13.0 vs. 6.6 deaths/1000), which is significantly greater than that of mortality in the 1st month of life (8.8 vs. 8.3 /1000), indicating that the sanitary/hygienic conditions, as well as access of children to effective medical care are poorer in rural areas.

In 2000, cardiovascular diseases were registered as a cause of 61.55% of all deaths, tumours of 16.14%, digestive and respiratory system diseases, as well as accidents contributing ca. 6% each. This structure is markedly different from the average of Central and East European Countries and EU, where cardiovascular diseases contribute 54% and 39% of deaths, respectively, and cancers 19% and 27%. Infectious and parasitic diseases cause 1.2% of deaths in Romania, as compared to 0.7% in Central and East European Countries, and 0.9% in EU. Age-standardised cardiovascular mortality for people of all ages was higher in Romania than in the rest of Europe during the past 30 years. In age below 65 years, the standardised death rates in Romania were close to Central and East European Countries average until 1990. However, recently, the rates increased in Romania, while decreased in the remaining Central and East European Countries. There are no apparent risk factors for the increase of rates of cardiovascular deaths in age below 65, or for the consistently high rates in all age cardiovascular mortality in Romania. Prevalence of tobacco smoking is relatively low, and nutrition habits are close to the southern European pattern.

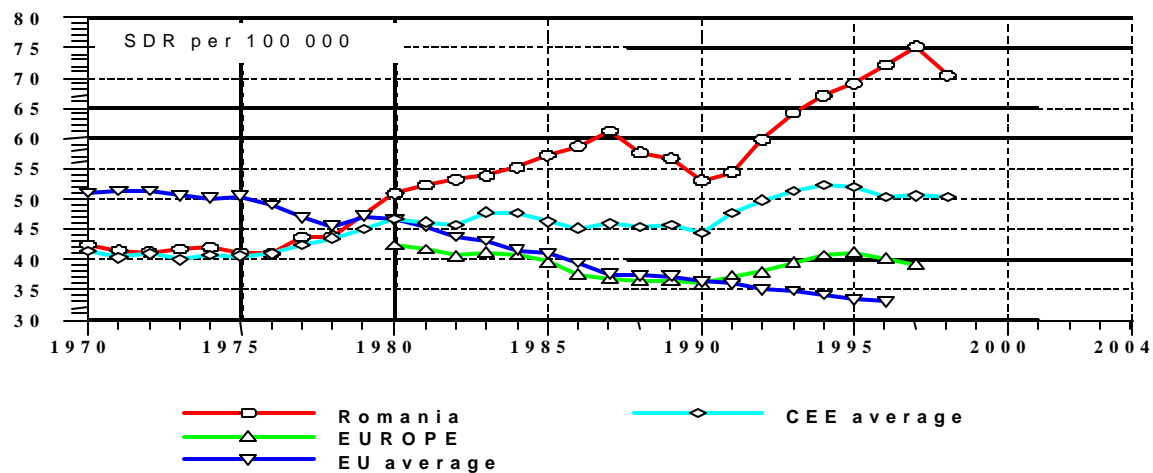
Life expectancy at birth, in years



Source: WHO-HFA

Mortality due to digestive system diseases also has increased since 1990, reaching levels 50% exceeding Central and East European Countries average and twice as high than in EU. Another trend of concern is observed for tuberculosis, with mortality increasing from the level of 4.6 per 100,000 in the 1980s to 9.5 in 2000. This increase was stopped in 1998, with the rate of 10.8, followed by 9.5 per 100,000 in 2000, but is still much higher than in the rest of Europe: average rates are around 4.6 in Central and East European Countries and 1.1 in EU. Both groups of diseases may be related to a broad combination of sanitary and environmental factors unfavourable for health.

Mortality due to digestive system dis. age/100000



Source: WHO-HFA

The burden of disease can be well described by the Potential Years of Life Lost (PYLL), considering the age of death. In 1998, close to 1.5 million life years was lost due to premature death. The main causes of PYLL were: for men accidents (28,7%), cardiovascular diseases (25,8%), cancers (15,2%), digestive diseases (10,3%) and respiratory diseases (6,9%); and for women, cancers (25,9%), cardiovascular diseases (24,6%), digestive diseases (8,4%) accidents (8,1%), and respiratory diseases (7,5).

Morbidity: According to the National Health Medical Survey, conducted in 1997, cardiovascular diseases or symptoms are prevalent in 38.4% adults, digestive diseases – in 16.3%, and chronic obstructive pulmonary diseases – in 4.7% of Romanian population older than 15 years of age. All these rates were higher than in the previous survey conducted with the same methodology in 1989. Those data indicate that a substantial part of Romanian population has elevated vulnerability to environmental hazards due to their poor health status. However, it is difficult to assess to what extent the environmental conditions play a role in determining the prevalence of the diagnosed diseases.

Capacity-Building, Education, Training and Awareness-Raising: There is the necessary critical mass of Hygiene and Public Health specialists, working at the level of the Ministry of Health and Family, as well as the level of local Institutes of Public Health and Public Health Authorities. They are cooperating based on partnerships with specialists from other ministries (Agriculture and Forests, Waters and Environment Protection, Industry, Labor and Social Protection, etc.). The system of training and education in the field of public health and environmental hygiene is based on an infrastructure consisting of a system of institutions, as following: the University of Medicine and Pharmacology trains the general practitioners in Preventive Medicine, Epidemiology, Public Health, Ecology and Management of Health Services by standardized curricula, in accordance to European requests. The post-graduated education is represented by: a 4 years specialty of courses and practical activities for specialists in public health or Hygiene or Epidemiology; one year Master courses for Public health and sanitary management; Ph.D. in medical sciences; competencies in public health promotion, sanitary economy and management; and continuous training for specialists in the same fields as above. The institutions for post-graduate education include: Universities of Medicine; Institutes of Public Health; the Medical Academy; and the general directorate for post university education of the MoHF.

Information: Demographic data suppliers are the physicians (family doctors, emergency doctors and hospital specialists). They are reporting the demographic events (births, deaths). Local institutions

subordinated to the Ministry of Internal Affairs report data related to internal and external migration. National Institute of Statistics and Economical Studies owns all the information concerning population statistics and dynamics. Information concerning population movement is periodically published (monthly and quarterly) inside Informational Bulletins, and yearly in the Statistical Yearbook of Romania.

Research and Technology: Research in the field of population statistics are carried out by: the National Institute of Statistics and Economic Studies that performed the population census and the current registration of the main demographic events by its territorial offices; the Institute of Public Health Bucharest is the national coordinator of the Programme for Health evaluation and demographic surveillance; the Statistical Centre for Sanitary Statistics that is the main statistical data holder, processor and report producing for medical and demographic events; professional associations like: Romanian Association for Public health and Management; and other non-governmental organizations. The technological development objectives are: improving the data quality and flow; improving of the technologies for data processing and security; and development of the technical and human capabilities for or data processing and analyzing.

Financing: The most substantial part of the funding is insured by the state budget, by the sectoral national Programmes. Also, a small contribution for the specific activities is realized by the international cooperation with, as WHOM, USAID, PNUD etc. The main financial sources for the activity carried out are: for national programmes or other programmes agreed by the Ministry of Health - state budget; for employees and material expenses - budgetary allocation; resources from state budget from contracts and grants; resources from contracts with District Public Health Directorates, other Romanian or international institutes; resources from welfare contribution, taxes on activities and their publicity; resources from provided services (contracts or direct payment); and sponsorships.

Cooperation: The internal cooperation is realized by participating in interministerial commission and in the NEHAP framework. The external cooperation in the field of public health is carried out with WHO, USAID, PNUD, IARC, CDC Atlanta, UN Fund for Population.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: According to the Romanian Constitution of 1991 (Art. 33(1)), the State is responsible for the health of the Romanian population. Therefore, the actions on the environment and sustainable development use public health as an important target. Maintenance and improvement of population health and life quality is the first general principle of the Romanian Health Protection Strategy for 2000-2004. This principle is also the first of few determinants for priority actions regarding environmental recovery and protection. The formal responsibility for public health, including environmental health, is with the Ministry of Health and Family (Law on Public Health Care, no. 100/1998). The implementation of related actions is carried out in the framework of 36 “National Programmes”, established by this law. The programme no. 9 (PN9) is the National Programme on Environment and Health. It addresses institutional development, regulation, inter-sectoral harmonization, and monitoring and health impact assessment. Acting as technical advisor of the MHF four Institutes of Public Health (in Bucharest, Iasi, Timisoara and Cluj and two Public Health Centres supervise the work of the Directions and act as territorial reference centers (with districts assigned to each of them). Within the PN9 framework, the National Programme on Environment and Health, the County Directions of Public Health existing in all 42 counties (one for each of 41 districts and a separate one for Bucharest) carry out the activities at territorial level. At local level, according to the Ministry Order 330/1999 the Sanitary Inspectorates carry out the inspection activities that are co-ordinated by a Chief Inspector from the MHF.

Programs and Projects: *Participation to international public health programs* - The Institute of Public Health Bucharest collaborates with international organizations and institutions on public health issues and acts as national co-coordinator many issues amongst which are the following:

- Elaboration and implementation of National Action Plan for Environmental Health (in collaboration with Ministry of Water and Environmental Protection);
- Center for Health and environment Geographical information system (HEGIS);
- National center for individual dosimetry for control of professional medical and non-medical exposed to ionizing radiation;
- Pilot center of clinical radio pathology;
- Focal point in relation with Central Commission for Nuclear Accidents and Cosmic Objects Falls (CCNACOF);
- National registry of doses for occupational exposure to ionizing radiation and for population;
- Information center for toxicology;
- National registry for environmental hazards (in collaboration with Ministry of Waters and Environmental Protection);
- Reference center for vectors control and pesticides regulations; and
- Bio-toxicology laboratory with Occupational Diseases Clinic, for all the occupational diseases hospitals throughout the country

Participation to national public health programs - The institute of Public Health Bucharest elaborates and coordinates the implementation of national public health programs. Also it evaluates technically and financially (complete or partial) national public health programs, which include:

- National program for action in environmental health (risk factors impact);
- National program for surveillance of health status of children and youth;
- National program for surveillance of occupational and work environment risk factors;
- National program for health status assessment and demography; and
- National program for communicable diseases control and surveillance.

Due to highly decentralised approach of public administration and high degree of local autonomy, the main line of the implementation of the National Environmental Health Action Plan (NEHAP) goes through the Local Environmental Health Action Plans (LEHAP). The overview of the LEHAPs is planned for the end of 2001. The local Plans are representing the opportunity for collaboration and partnership with the local authorities, in the framework of Agenda 21, and the environmental protection institution. We can present two examples:

- i) Maramures District - Baia Mare city: the Municipal Council has its Local Agenda 21: the approach is multidisciplinary, with the involvement of NGOs and economic agents, developing partnership. They made an inventory of the major environmental problems, set up priorities which are solid waste management, air pollution control, education for environmental health, reduction of exposure of vulnerable groups such as children and women; and
- ii) Iasi city: there is a document at the level of the Municipal Council regarding the strategy of urban development of Iasi city. In this document there are proposals on specific domains as environmental protection and environmental health. They refer to the water supply of the villages, which will be integrated in Iasi city, to rehabilitate Timisesti and Prut sources of drinking water and to improve the supply network. It also exists a BERD loan, for the improvement of the sewage treatment plants with a Manassman technology.

Status: *Overview of the health status related to environmental hazards* - According to the National Health Medical Survey, conducted in 1997, cardiovascular diseases or symptoms are prevalent in 38.4% adults, digestive diseases – in 16.3%, and chronic obstructive pulmonary diseases – in 4.7% of Romanian population older than 15 years of age. All these rates were higher than in the previous survey conducted with the same methodology in 1989. Those data indicate that a substantial part of Romanian population has elevated vulnerability to environmental hazards due to their poor health status. Cross-sectional Central European Study on Air Quality and Respiratory health CESAR, conducted in 1996, included four Romanian cities (Bucharest, Ploiesti, Baia Mare and Tirgu Mures). The study included schoolchildren between 7 and 11 years of age.

Several diseases recorded by the system of communicable diseases registration show high risk of disease transmission through the environment. The registered incidence of diarrhoea diseases decreased from 414 cases per 100,000 population in 1990 to 339 per 100,000 in 1997, but increased in the more recent years again (to 361 per 100,000 in 1999). The incidence of viral hepatitis (type A) decreased substantially in the 1990s as compared with the previous decades, but is still double of Central and East Europe average and almost ten times more frequent than in EU. The incidence of food borne infections, including salmonellosis, remained at a level of 15 – 20 cases per 100,000 throughout the 1990s. Cholera was registered for the last time in 1995 (118 cases).

Trends in the incidence of tuberculosis confirm the pattern indicated by mortality statistics. The incidence rates increased steadily in the 1990s, from 61 cases per 100,000 in 1991 to 104 cases in 1999. Even more disturbing is the doubling of tuberculosis incidence rates in children (from 13 to 32 cases per 100,000 in 1990-91 and 1999, respectively).

Health risks related to environmental factors: Drinking water supply and quality - According to the 1992 census, 85% of urban population and 16% of rural population had their homes connected to water supply systems. More recent information shows an increase in the access to piped drinking water at home (inside or outside of the building) in the cities (to 93%), but only to 17% in the rural areas. Source waters are supplied to 11% of population having access to piped water supply, ground water – to 24% of the people; the remaining 65% people use the water from systems mixing the sources. Water available to most of the rural population with no access to pumped water comes from about 1 million wells, mostly shallow (5-20 m depth) and susceptible to contamination. Close to 19% of surface sources and 10% of ground water sources used for drinking water extraction have had no sanitary protection (data from 1991-95).

Information related to the quantity and results of the water quality tests is very scarce and outdated. The most recent data analysed on a central level relate to 1995, when drinking water collected at consumer's tap did not comply with microbiological standards in 3% of the samples, and with physico-chemical standards in 8.4% of samples. Up to 44% of population received water with residual chlorine level below the standard.

Also the data on outbreaks of water-borne diseases is not analyzed centrally since 1995. According to the earlier data, between 2 to 12 outbreaks and up to 2200 cases were registered annually between 1991 and 1995. Half of the outbreaks were caused by the contamination of the water source and another half by network deficiencies.

Other water-related health risks - Sanitary sewage is available at homes of 83% of urban residents and of 11% of rural population. Such poor coverage, especially in the rural areas, creates a risk of contamination of drinking water sources and can be the reason for still high incidence of gastro-intestinal infections. Recreational waters may also create a risk of transmission of communicable diseases, especially as most of the sewage is discharged without any treatment. According to the information from 1996, only 200 out of 540 localities with sewage were also equipped in sewage treatment plant. Unfortunately, the data from recreational water quality monitoring is not available at national level. Present sanitary standards, developed in 1988 and adjusted to EC Directive (76/160 EEC) in respect to the microbiological parameters in 1994, are believed to protect well health of the users of *bathing waters*.

Irrigation water is subject to monitoring and evaluation before irrigation period. However, no data from this monitoring are available at national level

Air quality - Level of air pollution remains relatively high in many Romanian cities. It is indicated by concentrations of NO₂ and total suspended particulate (TSP). High levels of both pollutants indicate that motor vehicle traffic is an important contributor to air pollution.

In contrast to the pollution with suspended particles and NO₂, the concentration of sulphur dioxide is low (below 20 µg/m³) in most Romanian cities. Summary of the air quality data collected using well-standardised protocol and quality assurance programme of the CESAR study in the period from November 1995 until October 1996 are presented in following table. Measurements of the concentrations took place in one fixed background-sampling site in each city. 24-hour concentrations of PM₁₀, PM_{2.5} and SO₂ were measured once every sixth day, while the NO₂ concentrations were measured during consecutive periods of 12 days using passive samplers. For comparison, the table includes the results of measurements conducted with the same methods, at the same period in the other study centres in Bulgaria, Czech republic, Hungary, Poland and Slovak Republic.

Concentration of air pollutants measured by the CESAR study in Romanian cities, 1995-96 (annual means, µg/m³)

City	PM ₁₀	PM _{2.5}	SO ₂	NO ₂
Bucharest	93	53	7	20
Baia Mare	73	41	17	15
Ploiesti	79	56	16	22
Tirgu Mures	88	62	-	12
Other countries (min – max)	41 - 93	29 – 67	11 – 155	6 – 66

Source: *Central European Study on Air Pollution and Respiratory Health. Study Results. July 1997*

A small study on concentration of selected air pollutants inside buildings of Bucharest conducted in the summer of 2000 indicates that population exposure to air pollution, especially to suspended particulate, is very high also indoors. The levels of TSP measured indoors (representing 30 min. mean) were in the range 200 – 400 µg/m³, and mean NO₂ in the range 50 – 90 µg/m³. Concentration of lead (Pb) in ambient air is measured in several locations in Bucharest, showing a decline in average background concentration of lead in air from 0.94 µg/m³ in 1995 to 0.19 µg/m³ in 1999. However, a Northeastern part of Bucharest is under the influence of a battery-producing plant, and the annual average of Pb concentration near the plant was 0.96 µg/m³ in 1999, i.e. markedly exceeding WHO Air Quality Guideline level of 0.5 µg/m³. Until 1995, lead concentration in air was also monitored in cities with lead-emitting industry (Baia Mare, Copsa-Mica, Medias and Zlatna. In the period 1990-1995, annual mean levels in those cities varied between 0.6 and 2.6 µg/m³, with no indication of an apparent trend towards reduction of pollution level.

Solid and municipal waste - There is no precise information allowing assessment of the risk to health of the collection and storage of municipal and solid wastes. Some conclusions can be drawn from the study conducted in mid-1990s, when the inappropriate municipal waste collection and storage was found to be very frequent in Romanian cities. Deficiencies in household waste storage, collection and removal were reported by 40% of households included in a nationwide study conducted by the Institute of Public Health in Bucharest in late 1990s. In 77% of studied apartments, presence of insects or rodents was reported. Almost all the municipal wastes are stored in landfills; 26% of the landfills are controlled, and only 10% of sites have an environmental permit. In the mid-1990s, more than 60% of medical facilities sent their wastes to not-controlled municipal waste sites. According the recent legislation (MoH Ordinance no. 663-1999) the health care wastes are sorted by categories and the hazardous wastes are burned in the hospital burning facility (crematorium). The non-hazardous wastes are still disposed in landfills.

Direct contact with the wastes, distribution of the wastes by rodents, birds and other animals as well as penetration of the hazardous materials from the wastes create a risk to health of the population. Some suggestion for the poor sanitary conditions to be still present at the end of the 1990s is the incidence of leptosporozis, a parasitic disease that can be related to the contact with wastes. While less than 300 cases were registered in 1992-93, this number was 557 in 1998, and 755 in 1999 (with more than 1/5 of all cases registered in Botosani district).

Numerous industrial landfills are located close to human settlements and affect the environment. Several studies conducted the areas most polluted by metal smelters (Copsa Mica, Baia Mare, and Zlatna) in early 1990s have shown significant levels of population exposure to toxic metals (Cd, Pb), and confirmed adverse impacts of the exposure on health. The exposure is not only related to waste management, but also to the entire process of production not considering prevention of environmental pollution at all its stages. A potential, but not investigated, health problem, constitute radioactive wastes from uranium mining, phosphogypsum wastes from fertilizer production and saline water from oil extraction contaminated by Rn226.

Ionizing radiation - According to the present health and radiation monitoring around nuclear installations, no risk to general population health is reported in relation to the activity of this industry. Closing down of several uranium mines, without adequate measures to prevent population exposure to radiation from mining wastes, constitutes a source of risk. Its magnitude has not been, however, investigated.

Food contamination - Elevated levels of heavy metals (lead, cadmium and chrome) have been detected in various foods, such as milk, bread, potatoes, vegetables and fruits, available on the market. There is no systematic information on the areas where the metals uptake is more or less likely, but it is certain that high levels of contamination are present close to the metal processing plants, such as Zlatna, Copsa Mica and Baia Mare. Due to the ban of the use of chlorinated pesticides in agriculture already in mid-1980s, the levels of contamination of food with the organo-chlorinated pesticides was low in late 1990s, both in comparison with the maximum allowable levels and with the concentration of these chemicals in food in the late 1980s. Levels of nitrates in food are considered to be low, although in 10-25% of milk samples the nitrate level exceeds the national standard of 70 µg/kg. This standard is; however, markedly lower than the one adopted in the EU countries. In other food products, which might be, potentially, contaminated, the mean levels are less than 50% of the maximum allowed levels.

Microbiological contamination of food is still a problem, with registered number of cases of food borne infections remaining on a relatively constant level throughout the 1990s. In 1999, close to 3800 cases of food borne infections were registered, including 1103 cases caused by salmonella. In ca. half of the registered outbreaks, food was prepared and consumed at home.

Workplace conditions - Exposure to hazardous substances at the work place is quite common in Romania and causes substantial morbidity. Exposure to silica dust and to lead exceeding threshold limit value (TLV) was almost twice as common in the beginning of the 1990s than at the end of the decade.

Exposure to selected hazardous substances in the work place, 1999

Hazardous substance	Number of exposed	EXPOSED OVER TLV	Number of diagnosed cases of occupational diseases
Silica dust	69,028	39,345	649
Lead	17,511	5,662	238
Mercury	1,539	196	0
Chromium	4,032	817	22
Organic solvents	60,843	8,158	22
Irritant gases	96,374	23,071	71
Noise and mechanical vibrations	187,876	67,720	492

Source: *Institute of Public Health, Bucharest*

Conditions at the work place are also a cause of accidents. Out of the 6,481 accidents affecting the health of workers registered in 1999, 431 were fatal. Both the incidence of accidents, and the number of fatalities decrease by 7%-17% annually in the last years.

Capacity Building; Education, training and awareness raising: The system of training and education in the field of public health and environmental hygiene is based on a infrastructure consisting of a system of institutions, as follows: The University of Medicine and Pharmacology trains the general practitioners in Preventive medicine, Epidemiology, public health, ecology and management of health services by a standardized curricula, in accordance to European requests. The postgraduate education is represented by:

- A 4 years specialty courses and practical activities for specialists in public health or Hygiene or Epidemiology;
- One year Master courses for Public health and sanitary management;
- Ph.D. in medical sciences;
- Competences in public health promotion, sanitary economy and management; and
- Continuous training for specialists in the same fields as above

The institutions for postgraduate education include: Universities of medicine; Institutes of Public Health; The Medical Academy; and The general directorate for postuniversity education of the MHF.

Information: Monitoring the environmental health hazards is the responsibility of District Public Health Directorates. Most of the information collected in this monitoring is submitted to of Public Health for nation-wide analysis. According the ordinance of MHF no. 768/2000 the Institutes will process the data and edit the national reports allowing the Ministries, and the public, to have a national overview of all-important aspects related to environmental health. This ordinance follows the decision of the Public Health Law (100/1998), assigning the task to organize the information system of the public health care and should facilitate the implementation of the obligations required by the Aarhus Convention. The Institutes produces annual national reports as following:

- Institute of Public Health Bucharest presents for MHF, annually or at other specified intervals, synthesis amongst which are the following:
 1. Drinking water supply for population

2. Water-born diseases evaluation
 3. Evaluation of dwell water generated infantile methemoglobinemia cases
 4. Situation of natural water quality, used for bath or leisure purposes
 5. Situation of domestic waste collection, removal and neutralization
 6. Air quality in residential areas in main urban localities
 7. Situation of atmospheric air related indicators of health status of population
 8. Noise levels in county capitals
- Institute of Public Health Iasi produces the following synthesis: Evaluation of chemical contamination of food GEMS-FOOD indicators; and Synthesis of sanitary quality of alcoholic drinks.
 - Institute of Public Health Cluj produces the following synthesis: Evaluation of nutritive quality and microbiological contamination of bread and flour products; and Synthesis on quality of mineral waters.
 - Institute of Public Health Timisoara produces the following synthesis: Evaluation of nutritive quality and microbiological contamination of meat and meat products.

The Statistical Centre of the Ministry of Health and Family is responsible for the reporting and analysis of health data. The analysis covers (cause-specific) mortality and incidence of several communicable diseases subject to mandatory registration. The Centre publishes annual and quarterly analytical reports, giving good overview of the temporal and spatial (district-specific) pattern in the health status of population. Recently, the demonstration of the district data is also performed using computer-mapping program. Independently, the Ministry of Health and Family maintains the system of direct reporting of the incidence of communicable diseases, allowing for rapid epidemiological management. Registration of occupational diseases and their national analysis is the task of the Bucharest Institute of Public Health.

Research and technology: Research in the field of environmental health is carried out by: the Institutes of Public Health and the Public Health Centers which performed studies on the main research themes identified by the monitoring activities; the Statistical Centre for Sanitary Statistics that is the main statistical data holder, processor and report producing for medical and demographic events; Professional associations like: Romanian Association for Hygiene; and other non-governmental organizations. The technological development objectives are: Improving the data quality relates to environmental health; capacity building for health impact assessment; and to develop methods of cost –benefit analysis in environmental health protection.

Financing: The main financial sources for the activity carried out are:

- For national programs or other programs agreed by the Ministry of Health - state budget;
- For employees and material expenses - budgetary allocation;
- Resources from state budget from contracts and grants;
- Resources from contracts with District Public Health Directorates, other Romanian or international institutes;
- Resources from welfare contribution, taxes on activities and their publicity;
- Resources from provided services (contracts or direct payment); and
- Sponsorships.

THE MOST SUBSTANTIAL PART OF THE FUNDING IS INSURED BY THE STATE BUDGET, BY THE SECTORIAL NATIONAL PROGRAMMES. STARTING THE YEAR 2000, THE NATIONAL PROGRAM NO 9, FOR ENVIRONMENTAL HEALTH HAD, FOR THE FIRST TIME, A SEPARATE BUDGET, ALLOWING ITS IMPLEMENTATION USING NATIONAL FUNDS. ALSO, A SMALL CONTRIBUTION FOR THE SPECIFIC ACTIVITIES IS REALIZED BY THE INTERNATIONAL COOPERATION WITH, AS WHO, USAID, PNUD ETC.

Cooperation: The internal cooperation is realized by participating in interministerial commission and in the NEHAP framework for: elaborating the legislative propositions initiated by the government, other ministries or governmental agencies; and elaborating the state standards propositions together with Romanian Society of Standardization.

THE EXTERNAL COOPERATION IN THE FIELD OF ENVIRONMENTAL HEALTH IS CARRIED OUT WITH: WHO, USAID, PNUD, IARC, CDC ATLANTA, UNEFOP POPULATION IN THE FRAMEWORK OF THE INTERNATIONAL PROGRAMMES. COLLABORATION RELATIONS. INSTITUTE OF PUBLIC HEALTH BUCHAREST IS: SUBORDINATED TO MHF; COLLABORATOR OF MEDICAL SCIENCES ACADEMY, OTHER PUBLIC HEALTH INSTITUTES, PUBLIC HEALTH DIVISIONS, NATIONAL HEALTH INSURANCE OFFICE, MEDICAL STATISTICS AND DOCUMENTATION CENTER, UNIVERSITIES OF MEDICINE AND PHARMACY; AND COORDINATOR OF DISTRICT PUBLIC HEALTH DIRECTORATES.

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CHAPTER 7: SUSTAINABLE DEVELOPMENT PROMOTION FOR HUMAN SETTLEMENTS

Decision-Making: The Ministry for Development and Prognosis (MDP) is the public administration institution responsible for all aspects of regional development programming and for coordinating regional policy implementation. In defining and implementing regional development policy in Romania, MDP collaborates with sectoral ministries, which have an important contribution to the strengthening of the social and economic cohesion and they include the ministries of: Labour and Social Solidarity; Education and Research; Tourism; Public Works, Transport and Houses; and Waters and Environmental Protection, Ministry for SMEs (small and medium size enterprises) and Co-operatives. The National Development Plan for 2000-2002 is a national document involving a strong partnership between national and regional authorities and institutions of the civil society.

In Romania, the Human Settlements sustainable development conceived for a long and medium period is ensured in the field of territorial and settlements physical planning by the Ministry of Public Works, Transport and Housing. The legislation promulgated is as follows: *the Law for approving the National Plan for Territorial Planning* (NPTP): Section I-Communication ways no. 71/1996; Section II-Water, no.171/1997; Section III- Protected areas, no.5/2000, which provide the protection for natural built inheritance of national interest; and Section IV-Settlements network, no.351/2001, presenting the hierarchical system of human settlements in Romania and the degree of endowments required for each rang of network, urban or rural; and *the Law for Urbanism and Territorial Planning* which establishes the goals, competences and measures required for this field with the aim to ensure the fair and sustainable development of human settlements and the national territory, the environment protection and the increasing quality of human life. The bill for the approval of the Plan for National Territory Planning, 5th Section, natural risk zones by landslides, inundations and earthquakes, is being promulgated.

At the local level, the provisions of the General Town-Planning as well as the Zonal Plans provide the durable development. Presently 70% of the general town planning and 62% of the plans for communes have been assented and approved; the other GUP-s are in the process of completion by the end of the year 2001.

The County Councils have elaborated Territory Planning plans to ensure the sustainable development of the localities network in the county, proposals for infrastructure works (technical-public utility networks, roads), measures for environment protection and patrimony in the protected zones. 15 of the 42 counties have approved County Plans for Territorial Planning (CPTP); in the other counties these plans are being finalized, sanctioned, and approved. It is estimated that by the end of the year 2002 all the counties will have the CPTP approved. A study for the Territory Planning of the 1st region northeast, for development, as a pilot project, is also being worked on.

The Strategy of the NDP is focusing on nine priorities such as: private sector development and investment promotion; support SMEs development in the productive sector; improvement and development of and regional and local infrastructure; development of transport infrastructure, human resources, and tourism; support for innovation and technological development; agriculture and rural development; and protection and improvement of the environment.

Presently, the National Centre for Human Settlements (Habitat) has been established according to the GD no.711/July 2001, being responsible with formulation, enforcement and implementation of the national strategy for habitation. MDP was nominated to be member of this new inter-ministerial board. Therefore, the national strategy for habitation will be build upon and harmonize with the priorities and means of regional development settled by the NDP and incorporated into the national sustainable development strategy. For additional information, see also under **Programmes and Projects** and **Status**.

Programmes and Projects: There are large disparities within the development regions, between the counties, towns and communes. The counties where the most difficult problems may be encountered are those currently affected by the impact of the industrial restructuring process and those predominantly agricultural. For these reasons the financial assistance was focused within the areas most seriously affected by industrial restructuring, identified at a sub-regional level, taking into account the particular situation of the areas concerned. Romania identified 11 “priority zones/target areas” (at sub-regional level), where investment component of ESC PHARE 2001 Programme will be focused. These measures aim at fighting against social exclusion through the fostering of the employment opportunities and the increase of access to education.

A new bill for the 4th Section of NPTP is being elaborated, in partnership with the Ministry of Tourism, in the framework of the substantiation studies for the national territory arrangement plan. The bill has in view the capitalization of the national and local tourist potential, by the provision of the necessary measures for the coordinated development of resort tourism and local tourism, the provision of necessary public and infrastructure works, at the level of tourist zones and the localities with this profile. Other studies for the future sections of NPTP refer to technical and social infrastructure. Territory arrangement plans for the regions that will fundament the regional development are being elaborated (the pilot study for 1st Region northeast is about to be finalized); Ministry of Public Works, Transport and Housing harmonizing with the general tendency at European level, has elaborated territory arrangement plans for the trans-border zones (Hungary, Yugoslavia and Moldavia).

Beside the programmes and projects directly addressing the sustainable human settlement development, the PHARE 2000 programme the regional development component, which is in progress, aims at bringing about an increased dynamics of the economy, stimulating competition, leading to permanent employment and diminishing the production disparities between regions. The investment projects are focused on the priority sectors identified in NDP and in the regional development plans such as: developing the human resources in the context of the industrial restructuring; supporting SEMs in the field of production and services; and improving and developing the regional and local infrastructure. The eligible projects would create jobs and new economic activities in the area experiencing economic decline, introduce new modern technologies, carry out professional training of the labour force, and respond to the regional needs and use local resources. Focusing on similar objectives, the PHARE 2001—the Economic and Social Cohesion component aims to support the government in enforcing a multi-annual regional policy through investment projects for the accomplishment of the development priorities set in the NDP.

The integrated measures for investments in the economic and social cohesion are focused on five directions: supporting the creation and the development of the small and medium size enterprises; continuing the reform in the field of professional and technical training; supporting the development of the social services system; rehabilitation of the transport and environment infrastructure at a regional level; and improving the local infrastructure so as to enhance the attractiveness of the urban areas.

Among the strategies for medium term period, Territory Planning has a special place as a harmonization domain of sectoral policies for sustainable development. At the same time, as part of the Action Plan for the Application of the Romanian Development Strategy on Medium Term, (approved by Government Decision) the territory planning has a distinct chapter that threats the objectives and actions for its domain of activity. The financial resources are provided from the ministry’s budget, for its tasks, while for the works of local interest, from the local public administration budgets. Thus, for the elaboration of the general town plans (GUP-s), in the year 2001, 9 billions lei have been allocated, an additional funding is going to be added for the finalization of the elaboration of GUP-s for all the localities in the country.

The creation of decentralised, effective and broad partnership proved to be one of the key factors in the success of the Economic and Social Cohesion PHARE programmes. Partnerships involving upgrading of the partners skills is appropriate in order to maximize synergies, increase the commitment of all at the local and regional level, and call on a wide range of financial and intellectual contribution. The Institution Building components of both PHARE 2000 and PHARE 2001 Programmes help the beneficiary institutions to develop the partnership between national/

regional/ local stakeholders and to design regional projects. Under the IB component of PHARE 2000–NDP Implementation Support, there are projects, both TA and twinning, whose beneficiaries will be the Ministry of Development and Prognosis and the 8 Regional Development Agencies, giving particular importance to the development of partnership amongst regional communities, to the preparation of valid, mature regional development programmes and projects, including feasibility studies and detailed design, and to further strengthening the capacity of the Ministry of Development and Prognosis to co-ordinate and support the regional planning process managed by the regional executive structures. Alongside this support for investment, support for Institution Building will be provided at national and regional level to strengthen the institutions responsible for managing the aid schemes, as well as for the eligible beneficiaries of the ESC PHARE investment schemes – usually located in the target areas. Additionally, the projects located in the Disadvantaged areas benefit from incentives, offered according to the law.

Romania makes efforts to promote strengthened use of the funds to support actions which will make a positive contribution to the promotion of equal opportunities in such areas as access to employment and the terms and conditions of employment, access to business services and facilities and the reconciliation of professional and family life for women and men. The implementation of such measures is expected to lead to diminishing the unemployment rate and re-integrates the persons who deserted the labour market in order to carry on surviving agricultural activities. Implicitly, they will generate considerable positive results in human settlement development.

Status: The PHARE 2000 – Regional Development Programme is currently in the stage of preparation and/or selection of projects, the estimated date for concluding first contracts being the beginning of 2002. The PHARE 2001 – Economic and Social Cohesion Programme is under approval procedure. The drawing up of the procedural and contractual framework is in the final stage. For disadvantaged areas, the special programmes are currently in progress. The entire process is managed by MDP, which is responsible for the signing of financial contracts. The projects carried out these areas also benefit from tax incentives provided by the law.

Capacity-Building, Education, Training and Awareness-Raising: The facilities for research – projection for the durable development, through the URBANPROIECT National Institute and other organizations, which ensure the qualified elaboration of town planning and territory arrangement. The preparation and education for the Ministry of Public Works, Transport and Housing fields is ensured through profile faculties, within the Architecture, town planning and constructions - installations Universities, and Transports University which organize doctor and master's degree cycles as well. The public and locals awareness is ensured through mass media and specialty magazines in the field, which promote the necessary information to date.

To strengthen the institutional capacity for the implementation of an integrated regional development policy, both PHARE 2000 and 2001 Programmes include an Institution Building component, and their main goals include: development of capacities of regional development agencies in each of the Romanian macro-regions as professional; legitimate and sustainable organizations that are capable to leading the socio-economic development process in their region and to prepare valid, mature regional development programmes and projects, with a view to financing by PHARE, national and regional budgets and other external sources of investments in the period 2001-2006; and development and implementation of national policies and programmes of social and economic cohesion on a multi-annual basis by strengthening the institutional capacity of central ministries (Ministry of Development and Prognosis, Ministry for SMEs and Cooperation, Ministry of Education and Research, Ministry of Tourism), the 8 Regional Development Agencies and other relevant local authorities to prepare for implementation of the investment support to be provided.

At the same time, the PHARE 2000 Project Preparation Facility (PPF) will support the identification of the needs, constraints and potential for development, specific to the social services development sector, the most relevant target groups and their main needs and will assist the Regional Development Agencies in the

identification of the priorities and specific objectives for each industrial restructuring area. The PPF should also provide a diagnosis of the existing development level of the social services providers and NGO sector. Large awareness campaigns are related to every sub-component of PHARE project launching in order to disseminate through a diversity of channels the necessary information and materials to raise awareness of potential beneficiaries, to help them in the evaluation of needs and identification of the local target groups, and to ensure a transparent and competitive process of project selection. At the end of the programmes publicity will be organized to spread among the regions information about the results of the programme and the implemented projects.

The implementation of the measures for supporting the development of the disadvantaged areas is also publicly announced to raise awareness of the potential beneficiaries on the means of support and modalities to access it.

Information: According to the methodology for the elaboration of the NDP, provision is made for consultation and representation of a range of partners, namely the national, regional and local authorities and other competent public authorities, the economic and social partners, as well as any other relevant competent bodies within the framework of the national rules and current practices of the EU Member State concerned. The culture of working in partnership (in the EU Structural Funds sense), however, is rather low developed in Romania and much work is to be done for partnership enhancement, from the development of tight administrative coordination between implementing institutions and cross-sectoral work on designing, implementing and evaluating NDP priorities, to broad promotion of the regional development concept to a range of potential future partners.

The National Institute for Statistics mainly provides the necessary statistical information produces relevant data at regional level for: demography; employment; income and consumption, living standards indicators; and social infrastructure. It releases information on request or it publishes special regular documentations, such as: Coordinates of the Living Standard in Romania, Aspects regarding the quality of Living, The Environment in Romania.

Financing: The financial resources are provided from the ministry's budget, for its tasks, while for the works of local interest, from the local public administration budgets. Thus, for the elaboration of the general town plans (GUP-s), in the year 2001, 9 billions lei were allocated an additional funding is going to be added for the finalization of the elaboration of GUP-s for all the localities in the country.

For PHARE 2000 Programme a 25% national co-financing for investment projects (equal to 25 MEURO) will be provided from the state budget, corresponding with the PHARE contribution for investment component of 75 MEURO. Also, the State budget co-financing will cover 25% of the investments component of PHARE 2001 Programme (equal to 26.42 MEURO), PHARE contribution amounting to 85 MEURO. Local co-finance is also requested, both from local public budgets (no minimum contribution settled for PHARE 2000, but min. 10 % for PHARE 2001 Programme) and private (min. 40% of the project). The Institutional Building financial assistance is entirely provided by PHARE, amounting to 13 MEURO for PHARE 2000 and 14.25 Meuro for PHARE 2001.

In 2000, the Romanian Government allocated from its Special Development Fund the amount of 168 million lei for implementing the three special programmes aiming at supporting development of projects in disadvantaged areas. Each programme provided 90% of its budget for non-reimbursable financial assistance.

Cooperation: With respect to the international cooperation, Romania has a long history of cooperation with the EU and its specialized services. During the period 1995-1999 the PHARE Programme allocated 661 Meuro to Romania. For the period 2000-2006, in addition to PHARE, financial assistance to Romania

comprises support for pre-accession measures for agriculture and rural development through the pre-accession instrument SAPARD and support for infrastructure projects in the fields of environment and transport through the structural instrument ISPA, which gives priority to measures similar to the Cohesion Fund in the pre-accession period. Community assistance for financing projects through the three pre-accession instruments is conditional on respect by Romania on its commitments under the Europe Agreement, further steps towards satisfying the Copenhagen criteria and in particular progress in meeting the specific priorities of the Accession Partnership.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: The endeavour to incorporate the philosophy of sustainable development in any national or local development strategy is essential for Romania to cope with the requirements of, and fit into, the complex world we live in today. According to the Law on Environmental Protection No.137/1995, republished, each ministry is obliged to establish its own environmental management and develop the relevant environmental strategies. In this respect, the Ministry of Waters and Environmental Protection acts as a supervising authority. The Ministry of Waters and Environmental Protection (MWEP) exercise the overall management of sustainable development. A special law, but not yet functioning, set up national Council for Environment and Sustainable Development (NCESD). All central public administration authorities are represented in this Council. It is also open to: all para-statal bodies and institutions; academic for a; and other organizations including the private sector that are interested in national socio-economic development. The mandate of NCESD is as follows: to promote the accomplishment of the objectives of AGENDA 21 on national plan, through elaborating and implementing the national and local AGENDA 21; coordinated at the national level by National Centre for Sustainable Development (NCSD) as Executing Agency of UNDP Romania; to represent a promoter and a warrant of changing towards sustainable development through the accomplishment of a social consensus based on a dialogue between authorities and civil society, in the process of elaborating and making decisions for a sustainable development; and to ensure a permanent institutionalized frame to fulfil the mandate. Environmental protection matters are particularly complex and concern all the economic, social, and political sectors. The appropriate solution to these matters demands the participation of: all those interested in environmental protection; the public and its elected representatives; non-governmental organizations; and polluters as well as the state structure.

The Ministry of Agriculture, Food and Forest (MAFF) are responsible for policies, strategies and legislation on agriculture and forest at national level. As for the integration of ecological concerns into agricultural and forest practices, both the MAFF and the MWEP participate in interministerial commissions with other ministries (in particular the Ministry of Health) dealing with issues of common concern. The Ministry of Public Works, Transport and Housing (MPWTH) with its State Secretary for Transport is now responsible for the development of policy and legislation on transport-related emissions to air. It has issued legislation transposing the EU directives on vehicle emission and the roadworthiness of vehicles. There are inter-ministerial committees for road transport and for railway transport with their respective ad-hoc sub-groups dealing with legislative and regulatory projects; the MWEP participates in these groups. The Ministry of Industry and Resources is responsible for fuel-quality policy and legislation. The Ministry of Waters and Environmental Protection has overall responsibility for the environmental aspects of energy production and consumption. It cooperates with the environmental departments and agencies of other ministries, such as the Department of Energy of the Ministry of Industry and Mineral Resources and the Institute of Power Studies and Design. The national development plan (NDP) for 2000-2002, elaborated by the Ministry of Development and Prognosis by means of a broad partnership with national and regional, governmental and non-governmental bodies involved in regional development, establishes among the strategic sector priorities the protection and improvement of the environment. The formal responsibility for public health, including environmental health, lies with the Ministry of Health and Family (Law on Public Health Care, No. 100/1998). The County Directorates of Public Health in all 42 counties (one for each of the 41 districts and a separate one for Bucharest) carry out the activities at regional level. These activities include: monitoring environmental hazards (air quality, water quality, food, housing, noise, waste, radiation and hygiene at the workplace); and issuing permits for all the activities with a potential health impact.

Programmes and Projects: *Agriculture* - Besides Phare projects related to legislative approximation, the PHARE 98 projects related to local environmental action plans with demonstration projects and to environmental education (agricultural training in environment) are the most relevant to environmental friendly agriculture. Links to agricultural activities for small farms can be developed within the framework of those environmental projects.

The Danube Pollution Reduction Programme (1998) identifies four areas for environmental improvement in agriculture, which include better: agricultural practices; management of animal waste from large farms; and management of the forests and new management of the hydrological regime (hyrotechnical works) and of wetlands (reducing arable land). With a number of local projects, its aim is to reduce water eutrophication in 30% of the surface waters adjacent to farms by 2001 and to reduce nutrients in water by efficient agricultural practices in accordance with EU standards, thus increasing agricultural production by 10% by 2003, using the same amount of fertilizers. The project also plans to turn 3% of bad agricultural land in the Danube flood plain into wetlands by 2003. An "agricultural pollution control project" supported by the GEF will affect 72,000 ha in the *Calarasi County* intends to:

- Improve agricultural practices according to the suitability of the land (with demonstration projects) with environmental assessment;
- Develop a village-level manure management storage and handling system with environmental and health assessment;
- Fix sites and upgrade the monitoring of water and soil by the local EPI; and
- Prepare a land-use management plan (agricultural land nature reserve and forest) together with a guideline for the application of the Code of Good Agricultural Practices and a system for monitoring the quality of irrigation and drainage water.

The EU Special Accession Programme for Agriculture and Rural Development (SAPARD) aims to help solve problems of structural adjustment in the agricultural sector and to implement the EU body of law concerning the Common Agricultural Policies. It will run until 2006. On the Romanian side, SAPARD will be managed by an independent SAPARD implementing agency, which has been created within the Ministry of Agriculture.

Transports- The new pre - EU accession programme, the Instrument for Structural Policies for Pre-Accession (ISPA), is aimed at the development of transport and environmental protection infrastructure (waste, water and air infrastructure), in order to support the implementation of the relevant EU directives requiring large investments.

Energy - A rehabilitation programme for thermal plants has been initiated, but so far the objective of this programme has been to extend the life of the plants rather than increase their efficiency and reduce the environmental impact of power generation. A programme for renewable energy sources prepared before 1989 was reported to be unsuccessful, and a new programme is now ready for implementation, if approved. This programme includes solar energy, photovoltaic energy, wind energy, biomass energy and geothermal energy. District heating was a national monopoly, but in the early nineties the companies were organized as independent companies (so-called *Regii Autonome*) and control of the companies was transferred to the municipalities. A few companies are operated as private companies based on concession contracts issued by the municipalities, and the plan is to introduce this concept in more cities with support from the European Bank for Reconstruction and Development (EBRD). However, the conditions of the concessions offered do not attract tenders in open international competition. *Human health* - The definition of NEHAP, as well as the initial phases of its implementation, developed lines of communication between the health and environmental sectors. Several projects proposed by the NEHAP were included in the NEAP priority list. However, after the drafting of NEHAP the Inter-ministerial Steering Committee was abolished and merged into the national programmes of the Ministry of Health and Family.

Status: Agriculture - Impact on water: *Diffuse and point source pollution from agriculture activities*-

There are two categories of agricultural pollution: (i) *pollution from point sources*, especially zootechnical units with large emissions and high concentrations of gases, waste water and solid waste; and (ii) *diffuse pollution* due to emissions of chemical substances applied in agriculture: fertilizers, agro-chemicals, but also animal waste once it has been spread on agricultural land. *Water* quality is measured at point sources of pollution. However, the existing monitoring cannot determine the quantity of pollutants coming from diffuse agricultural pollution into surface waters and groundwater, and it has to be evaluated on the basis of models.

Agriculture has the greatest responsibility for methane (CH₄) (animal farms), nitrogen dioxide (NO₂) and ammonia (NH₃: over 95%) *pollution of the air*. There is no doubt that very large pig farms play a role in intensive local air pollution. *Soil pollution* - In Romania, large areas of agricultural land are registered as polluted by heavy metals and oil. Rehabilitation measures can be evaluated and proposed in studies financed by the land reclamation fund. Polluters should be made to pay for the clean up, but it is extremely costly. It is, therefore, more advisable to restrict agriculture in these areas. With 62% of arable land a large part of Romania is covered by agroecosystems. In contrast to grassland they do deserve protection because they may host threatened animal species and because of the cultivation of local varieties (agro biodiversity), such as extensive orchards. Biodiversity in the Romanian plains and their arable ecosystems has suffered in the past 30 years from large-scale mechanized farming with the removal of hedges and shelterbelts, the development of irrigation systems and land improvement works, the increase of cultivated land to the detriment of grassland areas, and finally the inappropriate use of agrochemical.

Transports: Local effects of air pollution from road transport - Ambient air quality exceeds maximum admissible concentrations (MAC) for many air pollutants like NO₂, SO₂, CO, PM and lead, quite frequently in many Romanian cities and industrial areas. The air pollution in urban areas is mainly due to industrial activities and traffic.

Noise: There are no nation-wide data available on the number of people affected by noise from roads, railways and airports. *Impact of new transport infrastructure on the landscape*: The impact of new transport infrastructure on the landscape is of course dependent on the location and design of the individual project. However, the probability of conflicts and damage to the landscape and ecosystems increases with the number of new projects. *Energy*: The environmental impact has been lower over the past decade because of a decrease in demand and production, following the recommended fuel supply strategy over the long term (World Bank study, 1998) would result once again in a pollution level similar to that in the late 80s. This indicates a lack of policies on energy saving, the use of renewable energy resources and of modern technologies to obtain higher efficiencies and on the reduction of the environmental impact of energy consumption. Policies aimed at reducing the environmental impact of the production, transmission, distribution and consumption of energy are mainly related to energy efficiency and are included in the National Energy Strategy and the National Sustainable Development Strategy, both approved by the Government in 1999. Hence, the policy aims to clean up past pollution and at the same time reduce the environmental impact of the future exploitation of domestic resources. However, funds are lacking and the coal mining industry is heavily subsidised by the State. The strategy on renewable energy sources is limited to five full-scale bio fuel projects and a number of demonstration projects. The legislation includes no specific incentive for the use of renewable energy sources.

Human health: Drinking-water supply and quality - According to the 1992 census, 85% of the urban population and 16% of the rural population had their homes connected to water-supply systems. More recent information shows an increase in access to piped drinking water at home (inside or outside of the building) to 91.8% in the cities, but only to 33.5% in rural areas. An important problem affecting both the availability and the quality of drinking water is the leakage and intermittent supply. Close to 19% of surface sources and 10% of groundwater sources used for drinking-water extraction have had no hygiene protection (data from 1991-1995). *Other water-related health risks*: The homes of 83% of urban residents and of 11% of the rural population are connected to sewers. Such poor coverage, especially in the rural areas, creates a risk of contamination of drinking water sources and can be the reason for the still-high incidence of gastro-intestinal infections. Recreational waters may also create a risk of transmission of communicable diseases, especially as most sewage is discharged without any treatment. *Air quality*: The level of air pollution remains relatively high in many Romanian cities, as evidenced by the concentrations of NO₂ and total suspended particles (TSP). The high levels of both pollutants indicate that motor vehicle traffic is an important contributor to air pollution. *Solid and municipal waste*: There is no precise information making it possible to assess the risk to health of the collection and storage of municipal and solid wastes. Some conclusions can be drawn from the study conducted in the mid-1990s, when municipal waste collection and storage were very frequently inadequate. Almost all municipal waste is land filled; 26% of the landfills are controlled, and only 10% of the sites have an environmental permit. *Ionizing radiation*: Present health

and radiation monitoring around nuclear installations indicates no risk to the general population's health. The closing-down of several uranium mines, without adequate measures to prevent population exposure to radiation from mining wastes, constitutes a source of risk. Its magnitude has not, however, been investigated.

Capacity-Building, Education, Training and Awareness-Raising: *Agriculture* - In January 1999 agricultural extension was reorganized as a body independent of the local agricultural directorates, through a Phare project (RO9505-01-01) and with the assistance of British and American experts (see AKIS system from the Kentucky extension exchange program). The new National Extension Agency (Agentia Nationala de Consultanta Agricola (ANCA)) has local extension services. Their task is to provide information to small farmers and to beginners, and in general to promote a better attitude to environment in the countryside. Moreover, they give some basic courses in agriculture in village schools. *Transports* - The Romanian Auto Registry is responsible for inspecting road vehicles. It reports to the MPWTH. It certifies and monitors garages and inspectors carrying out roadworthiness inspections of vehicles, issue car type-approvals and conducts technical inspections for registration. The national road and railway authorities are also under the MPWTH. The National Road Authority supervises the construction and the maintenance of roads and highways of national importance. The National Railway Authority does the same for the railways. *Energy*- The national energy saving agency, ARCE, plays an important role in the strategy, but the Energy Efficiency Law had just been passed by Parliament when the agency experienced a 50% reduction in size, including the closing of 8 of its 16 local agencies. While the new Law expresses Romania's desire to improve energy management, the problem is that the necessary resources to do so are unavailable. Municipalities with more than 40,000 inhabitants are obliged to draw up energy plans (so-called master plans). Measures focus on the consumption of energy for heating, which are the second largest energy-consuming sub-sector and also the second largest polluting sub-sector. The energy strategy focuses on more effective production, transmission and distribution by rehabilitating district-heating systems, installing new CHP capacities and biofuel boilers. Several projects have already been implemented and additional projects are in progress or in the pipeline. Only a few measures have been introduced on the demand side, the most important of which is the mandatory installation of meters. The end of 2002 will introduce the EU directive on household appliances. It has also been decided to implement standard labeling measures. All EU directives will be implemented in the medium term according to the agreement with the European Union. *Human health* - The monitoring of environmental health hazards is the responsibility of the County Directorates of Public Health. Most of the information they collect is submitted to the Institute of Public Health in Bucharest for nation-wide analysis. The Statistical Centre of the Ministry of Health and Family is responsible for reporting and analyzing health data. Independently, the Ministry of Health and Family maintains a system for direct reporting of the incidence of communicable diseases, allowing for rapid epidemiological management. The system, however, does not address the link between health and environmental data; e.g. it is not possible to estimate the location, number and extent of water-borne disease outbreaks.

Information: Collaboration on this issues is between the Ministries of: Waters and Environment Protection; Agriculture, Food and Forest; Industry and Resources; Public Working, Houses and Transportation; and Health and Family.

Research and Technologies: *Agriculture* - The National Integrated System of soil quality monitoring was set up in 1975 and harmonized with the European system in 1992. The Institute of Pedology and Agro chemistry of the Academy of Agricultural Sciences set it up. The monitoring system is based on a 16 x 16 km² grid. Land surveying, defined by Law No. 7/1996, includes surveying agricultural land and the organization of farm land and which is now carried out by both the Ministry of Agriculture, Food and

Forest (soil science and agrochemical studies) and the new National Office for Land Survey Geodesy and Cartography (inventory of properties), both on the national and local level (regional offices). The goal is to ensure that both activities are methodologically unified

Transports - The Romanian Auto Registry provides technical support to the Ministry of Public Works, Transports and Housing and is consulted when policy and legislation are developed. The Public Health Institute in Bucharest monitors urban noise (from all kinds of sources) every second year in co-operation with specialized local departments. The latest survey, of 1999, shows that noise levels continue to increase in almost all cities. Noise limits are exceeded by more than 20 dB (A) not only in the main streets but also in residential areas in the noisiest cities (Bucharest, Brasov and Braila). The noise levels range between 60 and 70 dB (A) in residential areas. Epidemiological studies carried out as part of the survey show that 45% of the population is annoyed or severely annoyed by noise. The main sources of high noise levels are traffic, industrial sites and "inadequate behavior by neighbors". It is expected that noise levels will come down in the future, as a series of EU directives on this matter should be transposed.

Energy - The introduction of nuclear power generation has led to a decrease in the use of fossil fuels. The consumption of primary energy resources (domestic and imported) is expected to increase to about 85 million tce in 2020 (Medium-growth scenario, World Bank, 1998) with an annual growth of 0.5% to 1.5%. Power generation is mainly based on domestic coal (hard coal and lignite) and natural gas almost 50/50. The introduction of nuclear power and the better use of hydropower resources (Figure 7.6) have changed the generation pattern, but most generation still takes place in old thermal power plants. The average efficiency of thermal generation is about 30-35%. Considering the extensive use of gas, cogeneration and efficiencies obtainable by the use of modern technology within these areas, the current efficiency is very low and could easily be improved. *Human health* - The Bucharest Institute of Public Health is responsible for registering occupational diseases and analysing their outbreaks. The Institutes of Public Health play a specific role in protecting public health system, as centres of methodological excellence, professional support and scientific resource for decision-making. However, many actions necessary for improving health and living conditions also require the involvement of other sectors, including the economy, industry, transport and housing.

Financing: *Agriculture* - SAPARD measures aim to contribute to a better environment and sustainable development. "Agricultural pollution control project" is supported by the GEF and will affect 72,000 ha in the Calarasi County. For the first year, grants from SAPARD totalling € 153 million (US\$ 166 million) will be available for Romania. The MWEP will be responsible for issuing environmental agreements or permits for all projects. Financing for agriculture related environment protection is provided also by the national budget.

Transports - Investments in road construction amounted to 1,138 billion lei (about US\$ 46 million) in 1995-2000. In general, investments made were slightly lower than the amounts forecast. Since 1998, all investments have been financed from the special National Fund for Roads. Before 2001 money in the Fund came from an annual tax on road vehicles. Since 2001, this tax has been included in the tax on fuel. Investments in railway infrastructure amounted to 534 billion lei (2000 value) over the same period (1995-2000). These investments were far lower than planned (13,900 billion lei, 2000 value), with a drastic reduction in 1998-1999. In 2000, investments picked up with the injection of EU funds. The pre - EU accession programme, the Instrument for Structural Policies for Pre-Accession (ISPA) will give grants of € 120 million per year for Romania, from 2000 until 2006. Grants of the same amount are available in the transport sector and will be managed by the Ministry of Public Work, Transport and Housing. Bucharest's public transport company (RATB) is voluntarily investing in more environmentally friendly buses. Currently 19% of the buses comply with EURO I standards and 24% with EURO II. Within the next eight years (2001-2008) RATB will purchase 100 new buses per year in order to replace all buses without exhaust emission control. In a pilot project RATB was also to introduce buses running on LPG in November 2000. *Energy* - Special Fund provides Sources of finances for investments in energy field for Development, general budget, and private sources, internal and external credits (BERD, BEI, PHARE and World Bank). Investment in a programme for renewable energy sources, if will be approved, will be € 15 million for only two demonstration projects for biomass use in rural areas. *Human health* - The responsibility for public health, including environmental health, lies

with the Ministry of Health and Family. Public health care actions are carried out within the framework of 31 national programmes established by this Law. Programme No. 9 (PN9) is the National Programme on Environment and Health (NEHAP). It addresses institutional development, regulation, inter-sectoral harmonisation, and monitoring and health impact assessment. In the year 2000, this programme had, for the first time, its own budget, allowing it to use national funds. The Government should ensure that expertise and resources of the Ministry of Health and Family are strengthened and used to assess the health impact of existing environmental conditions and of implemented, or planned, actions and policies, which should be a part of any planning process and to communicate the results to the public.

Cooperation: *Agriculture* - Romania ratified: Vienna Convention for the Protection of the Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer, London Amendment to Protocol, Copenhagen Amendment to Protocol and Montreal Protocol; Rio Convention on Biological Diversity; Paris Convention to Combat Desertification; Bern Convention – Conservation European Wildlife & Natural Habitats; and Sofia Convention on Cooperation for the Protection and Sustainable Use of the Danube River. *Transports* - Romania has signed a number of international environmental conventions, which may imply actions within the transport sector. One example is the Protocol to the Convention on Long-range Transboundary Air Pollution adopted in Gothenburg, Sweden, in December 1999. Under the United Nations Framework Convention on Climate Change and the Kyoto Protocol, Romania is committed to reducing greenhouse-gas emissions by 8% in the period 2008-2012, compared to the reference year (1989). However, the most important agreement is the agreement for Romania's association to the European Union, and the pressure that it puts on the transport sector. *Energy* - Romania ratified following international conventions: - the Espoo Convention on Environmental Impact Assessment in a Transboundary Context; and - the United Nations Framework Convention on Climate Change and the Kyoto Protocol. *Human health* - The Cross-sectional Central European Study on Air Quality and Respiratory Health (CESAR) included four cities in each following country: Bulgaria, Czech Republic, Hungary, Poland Slovakia and Romania. Romanian cities were Bucharest, Ploiesti, Baia Mare and Targu Mures. Also, Romania signed and ratified international conventions related to environment and human health.

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: Responsibility is with the Ministries of: ministries include: Waters and Environmental Protection (MWEP); Industry and Resources (MIR); Public Works, Transport and Housing (MPWTH); and Health and Family (MHF). The MWEP is the competent authority for ongoing policy and further legislation concerning the atmosphere protection in order to meet Government policy in environmental protection and international requirements and according to the Romanian territorial development plan, the ministry has established 42 Environmental Protection Inspectorates (EPI) around the country and in each county. Inter-Ministerial Working Group was established to adopt new legal regulations. Romania ratified the Aarhus Convention on Access to information, public participation in decision-making and access to justice in environmental matters. In addition, the Romanian Environmental Law had special provisions about public participation, NGOs, local authorities, trade unions, business and industry representatives, scientific communities' involvement in environmental decision-making. Presently, Romanian Law provisions do not include any compensation or other forms of protection to professional groups affected by the atmosphere pollution.

Legislation and regulations include: Environmental Protection Law no. 137/1995, republished in 2000, chapter III, section 2; Law 24/1994 which ratified UN Frame Convention on Climate Change done at Rio in June 1992; Law 3/2001 which ratified Kyoto Protocol; Law 8/1991 which ratified the UN/ECE Convention on Long Range Transboundary Air Pollution, Emergency; Ordinance on Atmosphere

Protection 243/2000; Governmental Ordinance 46/1994 concerning the financial support to enforce the Law on Land Fund no. 18/1991; Ministerial Order 462/1993 to approve the technical conditions concerning the atmosphere protection and methodological norms to set the atmosphere polluting emissions for stationary sources; Ministerial Order 125/1996 to approve the procedure to regulate economic and social activities with environmental impact; Ministerial Order 756/1997 for the Regulation approval concerning the environmental pollution assessment; Ministerial Order 1032/1997 for approving the technical norms for environmental inspections; Governmental Decision no. 1275/1996 concerning establishing and working system of National Commission on Climate Change; Governmental Decision no. 568/2001 regarding the technical requirements for limitation of volatile organic compounds emissions resulting from the storage of petrol and its distribution from terminals to service stations; Governmental Decision no. 732/2001 relating to the quality of petrol and diesel fuels; STAS 12574/1987, for ambient Air Quality in protected areas; STAS 10813/1976; STAS 10194/1989; STAS 10810/1976; STAS 10104/1976 concerning the analysis samples taking; Ministerial Order 340/2000 to approve the list of services performed by the environmental protection authority and the values of the taxes; and Law no. 73/2000 to promote the Environmental Fund.

MWEP elaborated with Denmark Strategy for EU legislation approximation on Air Quality and Climate Change Sector. *Greenhouse gas (GHG) emissions*: The Romanian Government's target is to stabilize carbon dioxide emission after 2000 at the 1989-year level. A national policy for Climate Change is focused on reduction of GHG has not been yet finalized. The First National Communication on Climate Change determined a survey of relevant activities, which was approved by the Government and became an effective instrument for the implementation of the Frame Convention on Climate Change, the ongoing adoption of Kyoto Protocol. The Kyoto Protocol was ratified in 2001. Both Terrestrial and Marine Resource Development for GHG Sinks and Substances that Deplete the Ozone Layer have not been yet finalized. *Transboundary air pollution*: The Romanian Government aims to implement the Law 8/1991, which ratified the Long-Range Transboundary Air Pollution Convention, and it's Protocols on short-term limit 2004. Romania signed in 1998 the Protocol on Persistent Organic Pollutants and the Protocol on heavy Metals and in 1999, the Protocol to Abate Acidification, Eutrophication and Ground level Ozone. *Mitigating ozone depletion*: Reduction of ODS consumption by at least 50% until 2005 in comparison with the consumption mean values 1995-1997. *Mitigating transboundary air pollution*: The emission of sulfur dioxide reduced by 30%, nitrogen dioxide by 20%, ammonia by 3% and VOC 15% until 2010, compared with 1990 level.

Programmes and Projects: Romania initiates include the following:

- Improvement of techniques in animal nourishing quality; wastes management and integrated monitoring;
- Strengthening of the institutional capacity for environmental protection; the relationships with other ministries, local authorities, NGOs, public, international bodies, monitoring and authorizing network, specific control of using, import, export of ODS; and
- Legislative framework by approximating the EU legislation by completion of the internal framework legislation in order to regulate the activities that affect the environmental quality.

National Research and Development Institute for Environmental Protection aims to promote a better understanding of environmental evolution at local, regional and national level, developing research programmes and projects to establish the frame lines to adopt reduction plans and strategies.

Climate Change: Switzerland has provided technical assistance and funds (US\$ 4 million) for a thermal energy project to reconstruct the district heating systems in the Romanian cities of Buzau and Pascani. This arrangement is a pilot phase for future joint implementation, which will include the crediting of emission reduction units under the Kyoto Protocol. An "activities implemented jointly" project was

implemented in cooperation with Netherlands. This project is to monitor power plants emissions and energy efficiency. The legal framework is provided by the framework MoU on economic cooperation with Netherlands, which was ratified by Romania in 1993. Funds and technical assistance for the projects are provided under the Netherlands programme for technical cooperation for southeastern European countries (PSO). Other countries have also expressed their interest in developing MoUs for joint implementation with Romania.

Protection of the Ozone Layer: With the support of the Multilateral Fund and the United Nations Industrial Development Organization (UNIDO), a project on institutional strengthening was implemented; involving a workshop for the customs authorities as well as a public-awareness campaign. The Ozone Action Programme of the UNEP Division of Technology, Industry and Economics is assisting Romania's Ozone Unit, in particular by providing technical information and publications. In cooperation with UNIDO, a 'Refrigerants Management Project' was started in 1999. Romania is cooperating also bilaterally with neighboring countries to protect the ozone layer. For instance, there is close cooperation with Hungary to control and license imports and exports, and 10-15 tons of ODS from Romania are recycled in Hungary per year. Romania's Ozone Unit is assisting the authorities in the Republic of Moldova, by providing information.

Status: According to the 1999 Romanian Environmental Status Report, the major pollutant sources are still working, against measures with a negative impact that reach critical levels with economical, social and ecological impact. After the 1999-year the greenhouse gas emissions levels are decreasing not only because of industrial activity decrease, but also especially due to reduction emission programmes implementation. Romania committed itself to an 8% reduction in emissions in the period 2008-2012 as compared to the reference year, 1989. Romania has considerable potential for projects in the framework of joint implementation (article 6 of the Kyoto Protocol). A recent evaluation conducted in the year 2000, in addition to the 1999 Romanian Environmental Status Report on the greenhouse gas level was 69229 Gg a decrease from 1994 levels. 1999 was a very important year regarding the ODS situation due to a freeze of ODS consumption, especially for the saturated hydrocarbons with chlorine and fluoride at the 1995-1997 years levels. A national action plan and a country programme to phase out ozone-depleting substances (ODS) were drawn up, and the country programme is currently being updated. Romania is committed to cutting its ODS emissions to zero between 2005 and 2015. According to the 1999 Romanian Environmental Status, the air quality in urban areas is mostly affected by the traffic and industrial activities with major effects for five counties situated in the NW part of the country where the maximum admissible concentrations are exceeded for all quality indicators.

Currently, industrial sector does not use any technology/self-monitoring tools to observe and record atmospheric changes. A detection system concerning changes and fluctuations in the atmosphere are located outside of industrial facilities and are operated by local Environmental Protection Inspectorates and regional institutes that belong to Ministry of Health and Family.

Capacity-Building, Education, Training and Awareness-Raising: Environmental Protection Law no.137/1995 provides that all social and industrial activities must raise awareness by public announcements and will start or close some installations which create pollution impact on the environment. Romania provides the following programmes/facilities: biology laboratories where the pupils can study species and their own natural habitat; outdoor lessons where the pupils can study different species and the impact of human activities under the natural habitat of those; indoor special lessons about natural ecosystems and it's evolution around the time; and student s in the final year are provided with classes where they undertake special knowledge about ecology as a science and the impact

of different kind of human or natural hazardous activities. During 2001-2004, on short-term basis, Romania will introduce capacity building programmes to increase training of experts and technical staff of the Romanian Strategy on Atmosphere and the Environment.

Information: Information is available at <http://www.mappm.ro>.

Research and Technologies: There are programmes in Research and Development (R&D) such as: improving firing equipment through adjustments to fuel quality, fuel injection systems and other adjustments to boiler operations; fuel switching from coal to oil and natural gas; fuel switching from carbon to non-carbon based fuels (hydropower, biomass); boilers improvements; turbine cycle improvement; waste heat recovery systems; installing cogeneration, and more efficient transformers; up grading and automation of distribution instrumentation and control; energy-efficient electro technologies; the use of renewable energy (hydropower, biomass, geothermal, waste-derived fuels); environmental pollution control technologies both for pre-combustion/combustion and also post-combustion; pre-combustion techniques for NO_x; the controlled injection of coal or natural gas in the boiler; low-NO_x burners (LBN); advanced overfire air; coal pretreatment and beneficiation; post-combustion technology for removal of sulfur dioxide-flue gas desulfurization (FGD); post-combustion technologies for NO_x control: Selective Catalytic Reduction (SCR); Selective Non-Catalytic Reduction (SNCR); clean coal technology; fluidized bed combustion; integrated coal gasification/ combined cycle systems; integrated gasification combined-cycle (IGCC) power plant technologies; control techniques for the reduction of POP's emissions resulting from thermal process in metallurgical industry, coke production, anode production, aluminum industry; and control techniques for the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and distribution from terminals to service stations, and from the use of organic solvents in certain activities and installations. See additional information under **Status**.

Financing: Funding is provided by the State budget (30%), Private sources and sources from outside the country (35%). The Government has set up a National Environment Fund. See also under **Programmes and Projects**.

Cooperation: In view of EU accession, air management involves two sectoral approximation strategies. Sectoral Approximation Strategy on Air Pollution and Climate Change in Romania (1999) covers the transposition of the Air Quality Framework Directive and its other directives, several vehicle-type approval directives and fuel quality directives, and the Climate Change Directive. A Sectoral Approximation Strategy on Industrial Pollution Control (1999) covers the transposition of the directives on integrated pollution prevention and control, air pollution from industrial plants, limitation of emissions from large combustion plants, limitation of emissions of volatile organic compounds from certain activities and installations, control of major accident hazards involving dangerous substances, voluntary eco-management and audit schemes, eco-labelling, pollution caused by certain dangerous substances discharged into the aquatic environment, air pollution from the incineration of municipal waste and the incineration of hazardous waste was developed in partnership between the Inter-ministerial Working Group on Air and Climate Change and a team of EU consultants sponsored by the Danish Environmental Protection Agency. *Climate Change:* Romania ratified the United Nations Framework Convention on Climate Change in 1994 and ratified the Kyoto Protocol in 2001. A National Commission for Climate Change was established by government decision in 1996. The Minister of MWEF chairs an inter-ministerial National Commission. Romania has signed a memorandum of understanding (MoU) with

Switzerland to establish the framework for “activities implemented jointly” under the Convention on Climate Change. The Netherlands is also cooperating with the Romanian authorities on “activities implemented jointly.”

Protection of the Ozone Layer: Romania is a Party to the Vienna Convention for the Protection of the Ozone Layer, the Montreal Protocol and its London amendment. The Copenhagen amendment has already been transposed into national law in 2001. An Ozone Unit was created as the national focal point within the MWEP’s Department of Environmental Protection, with the financial support of the Multilateral Fund under the Montreal Protocol. The Ozone Unit has started the procedure for the ratification of the Montreal amendment to the Montreal Protocol. Romania regularly reports to the Secretariat of the Vienna Convention and the Montreal Protocol. The UN/ECE Convention on Long Range Transboundary Air Pollution was signed in 1979, but is in course of ratified.

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

Decision-Making: The issue of mineral resources management is the responsibility of the Ministry of Water and Environmental Protection and of the National Agency of Mineral Resources.

In 1995, the Environmental Protection Law was promulgated. Among the relevant provisions contained in this law is the need to elaborate environmental assessment studies and to set up regulation specific to assessing the damage produced by anthropogenic activities. In the Environmental Strategy of Romania there is a special chapter dealing with the areas affected by pollution due to both the over utilization of chemicals (especially before 1990) and the development of the extractive and processing industries. All the activities that are carried out must have an environmental permit and must comply with the principles of sustainable development.

Programmes and Projects: National Soil Monitoring System was implemented and new regulations and the Government promoted actions concerning land improvement in degraded areas.

Status: The inventory carried out in the framework of the National soil Quality Monitoring System (organized by Research Institute for Soil Science and Agro chemistry) shows that about 12 millions ha of agricultural land. The inventory carried out in the framework of the National Soil Quality Monitoring System shows that about 12 millions ha of agricultural land of which 9,3 millions ha arable land are more or less affected by one or several limitations. The influence of these limitations deteriorates the characteristics of soil functions that affect the soil bio-productivity capacity as well as the yield quality and food security with severe consequences on the soil quality.

The main restrictive factors are: 7100000 ha frequent drought, 3781000 ha periodic excess of water-logging, 6300000 ha water soil erosion of which 702000 ha landslides, 378000 ha wind soil erosion, 614000 ha soil salinity, 3437000 ha moderate and strong acidity, 8620000 ha low and very low, humus content 625800 low and very low available phosphorous content, 5088000 ha low nitrogen content, 781000 ha low available potassium content, 1500000 ha zinc deficiency, 900000 ha chemical soil pollution, 50000 ha pollution with oil and brine, 30000 ha disturbed by various works, 18000 ha covered with solid wastes.

Chemical soil pollution affects about 0.9 million ha, of which 0.2 million ha excessively polluted (pollution with heavy metals, acid rains, etc.). The main negative effects of pollution with heavy metals and acid rains consist in soil chemical composition alternation due to the accumulation of emission elements, soil acidification with 1–3 pH units, leaching of exchangeable bases, mobilization of high amounts of exchangeable Al with a toxic effect on plants, severe decrease of nutrients, especially mobile phosphorus, leading to poor plant fruiting, deregulation of microbiological activity decrease of bacteria population and dehydrogenase activity, increase of fungi population and index of colonization with micromycetes) leading to the decrease of humification rhythm of organic matter, excessive heavy metal accumulation in plants, etc. This type of pollution is present on important land areas in the zones of Baia Mare, Copsa Mica, Zlatna, etc. The total area affected by pollution in the Copsa Mica region covers approximately 180750 ha, of which 31285 ha forest and 149465 ha agricultural lands. The severely polluted area, where at least one pollutant exceeds the maximum allowable limit (100 mg.kg⁻¹ Pb, 100 mg.kg⁻¹ Cu, 300 mg.kg⁻¹ Zn and 3 mg.kg⁻¹ Cd) covers 21875 ha, of which 3249 ha forest and 18630 ha agricultural lands. Within the severely polluted area, the total forms (extraction with a mixture of

$\text{HNO}_3\text{--HSO}_4\text{--HClO}_4$ at 2: 1:0.2 ratio) of heavy metals exceed the maximum allowable limits, that is: 3-30 times (Pb), 2-32 times for Cd, 2-3 times (Zn) and 2-4 times (Cu). Excessive contents of Pb, Cd, Zn and Cu in leaves of sugar and forage beat, maize, potatoes and winter wheat were detected with polluted area. For example, the contents in sugar beat leaves had contents of: 30-115 mg.kg^{-1} Pb, 4.3-13.5 mg.kg^{-1} Cd, 105-167 mg.kg^{-1} Zn, 12-30 mg.kg^{-1} Cu, and in maize leaves was: 25-107 mg.kg^{-1} Pb, 1.2-19.8 mg.kg^{-1} Cd, 52.5-162.5 mg.kg^{-1} Zn, and 10-37.5 mg.kg^{-1} Cu.

In Zlatna area the acid deposition totally destroyed the vegetation on more then 2000 ha, which caused very intense processes of erosion and landslide. Other 3000 ha are subjected to degradation processes and heavy metals pollution has a moderated intensity on other 15000 ha. A more intense process of acidification takes place in an area covered by acid soil, the pH (in water) of soil being reduced from 3.9-4.1 to 2.6-3.2 in the severely polluted area. Consequently, the degree of base saturation diminished from 51-71% to 17-28% in severely polluted soils and to 37-43% in moderately polluted soils, due to exchangeable base content decreases.

Tendency of a decreasing content of humus, N, P and K in all soils can be observed for last 10 years: area with low and very low humus content increased from 7.11 million ha to 8.62 million ha, area with moderate and strong acidity increased from 3.26 million ha to 3.44 million ha, area with low and very low available phosphorous increased from 6.16 million ha to 6.29 million ha, area with low available potassium content increased from 0.66 million ha to 0.78 million ha, and area with low nitrogen content increased from 4.76 million ha to 5.09 million ha.

The upper layer loading with potential pollutant elements and substances of the soils sampled within level I of Soil Quality Monitoring System in Romania (16×16 km grid = 934 sites) revealed variable contents related with the soil type, soil features (texture, soil reaction, organic matter content) and the land use. Part of the high heavy metal contents have a geo-genetic nature and are close related with fine texture (clay loam and clay) as well as with organic matter contents. Some of the potential pollutant elements and substances exceeding normal value have occurred due to the industrial pollution (non-ferrous metallurgical industry, chemical and petrochemical industry, thermoelectric power plants, etc.) and agriculture (over dose fertilization and/or pest control substance, etc.). The economics in transition from planned to market-oriented systems need a framework to incorporate environmental considerations into economic activities, including agricultural.

Capacity-Building, Education, Training and Awareness-Raising: There is a tendency to improved analytical capability of laboratory in RISSA and in countries soil testing laboratory. Local training of stockholders in polluted area has been developed. New courses related with impact of pollutants environment and rehabilitation of polluted soils was organized in Agricultural Universities.

Information: Collection and interpretation of information on soil quality in Romania that led to the preparation of the following reports: an atlas "Soil Quality Monitoring in Romania" including 24 maps and an explanatory text (50 pp.) presenting the data obtained within the framework of the national network of I level (16 km×16 km grid) with a view to: land use; soil class and type; textures, clay and organic matter in topsoil; compaction, saturated hydraulic conductivity, water stability of soil macro-aggregates in 0–25 cm and 25–35 cm layers of soil; average content of organic matter, available phosphorous and potassium in 0–50 cm layer; soil pollution types; total content of Cu, Pb, Zn, Cd, Co, Ni, Mn, Cr, SO_4 , F, DDT, HCH in topsoil; Quality assessment of soils in Romania and their conservation measures (2 volumes – 414 pp.); soil pollution with fluorine (197 pp.); and pollution with petroleum and brine of soils in Romania (227 pp.).

Research and technologies: Soil monitoring system in Romania: agricultural use of organic wastes (sewage sludge, manure and waste water from livestock, compost from urban waste, etc.); rehabilitation of polluted soils (heavy metals, oil and brine, saline soils, dumps from surface mining, etc.) in Romania; assessment of impact of industrial emissions on soil and plant; research regarding pollution of urban soils used for horticulture and its implication on environment quality state; adaptation of mathematical models of pesticides behaviour in soils; and combat desertification, drought and soil degradation in Romania.

Financing: No information available.

Cooperation: FAO - Project "Rehabilitation of Polluted soils in Romania"; and COST 837

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CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: Governmental Decision No. 12/2001 establishes that Ministry of Agriculture, Food and Forest (MAAP) as the national authority responsible for forestry. 16 forestry and hunting territorial inspectorates who control forest regime plus the private forest, all function under MAAP. In addition, under MAAP, National Forest Administration as a subordinated unit, implements National Silviculture Strategy and also works for protection, conservation and sustainable development of forest, for hunting and fishing management. Forest Research and Management Institute is under National Forest Administration and is specialized for research-projection and for experiments in the field of forestry. The present legislation in Romania, adopted in the last ten years, refers to the forestry problems as follows: National governance action plan approved by Governmental Decision no. 455/2001; Forestry Code No. 26/1996, which provides the management of the state and private forests, as well as the assurance of forest, fund integrity and development; Governmental Ordinance no. 96/1998 on forest regime reglementation and national forest found administration, republished; Law no 107/199 for approval Governmental Ordinance no. 81/1998 which provides measures for ameliorating by afforestation works the degraded lands unsuitable for agricultural uses as well as the unproductive lands (badlands); and Law no. 103/1996 on hunting found and protecting hunt. Also there are other laws and Governmental decisions under these reglementations in the field of forestry. Also, in the same field Romania has Sustainable Development Strategy of Romanian Silviculture (2000-2020) and Silviculture Development Strategy in the concept of sustainable management of forest (2001-2010).

Programmes and Projects: Now is in course of preparation the first draft of Development Silviculture Programme for the next 5 years, starting with 2002, with US\$ 28 million provides by World Bank credit. This programme contributes to maintain and improve forest sustainable management, in concordance with National Sustainable Development Strategy and Agenda 21. Its most important components are to: provide sustainable management of private forest by capacity building of local forestry inspectorates and development of IT system for forest management and monitoring; build roads in order to facilitate access to the 2 million ha of mountain forests which are presently inaccessible in order to put better use the resources offered by forests; set up Center for Business Information in the field of forestry; and public involvement in sustainable management of forest. The implementation of the programme is the responsibility of the Ministry of Agriculture, Food and Forests and National Forest Administration, in collaboration with non-governmental organizations and local communities.

Status: The forest fund of Romania include 6,37 million ha (i.e. 26,7% of the whole area) of which 6,23 million ha are covered by forests. Most of the forests are state owned, with only approximate 400,000 ha in private ownership. The process of retrocession to the former owners is under way in the case of other forested areas. In the last 7 years natural reserves and national parks was created in forested land. 412,2 thousand ha of forests (6,6% of the forests area) was declared protected areas, and 127,7 thousand ha strictly protected woods. Characteristics of the present state of Romanian forests and forestry are as follows:

Reduction of forestry surfaces below the critical limit from 80-85% (the natural proportion of woodlands), to 26,7%, currently, with great regional variation: only 7% in the plains, precisely where the climate turns arid, excessively droughty periods become frequent and long and where the adverse effects caused by the global climatic changes are dramatically felt; only 28% in the hilly regions, where soil erosion and landslides have become frequent; and 65% in the mountains, where originate the raging flash floods. Even

through less rapid, the shrinkage surface continues, while the situation in other European countries is totally different.

Drastic decrease in the biodiversity of the forests, especially the number of eco-system types: There is a danger that forests, the greatest source of biodiversity in the county with over 12,000 species, will be greatly impoverished in terms of their biodiversity, with severe ecological, economic, cultural and social consequences. It must be observed, however, unlike other countries, Romania still has large natural pristine and quasi-pristine forest areas with an exceptional biodiversity and stability, which are inaccessible (i.e. the beech forests in Banat and northern Oltenia).

Exhaustion of usable forestry resources as a consequence of extensive exploitation because in many forestry basins, 3-10 times the productive capacity of the forests was cut, depending on the existence of access roads. Consequently, in 4 decades, the normal volume of wood crops decreased by circa 40%; during the transition period the official over-exploitation decreased, but illegal woodcutting rose sharply;

Declining health of the forests, which was caused by drought, pollution, pasturing, hydrotechnical work and other reasons during the past ten years. At present, four out of ten trees are diseased, and almost two are seriously ill. The health state of the oak, acacia, spruce fir and fir forests is also precarious. The most endanger are the forests in the plains and hilly areas, especially those in the southern and south-eastern part of the country, where the aridity process is heating towards desert effects. In present Romania attend to International cooperation programme for evaluation and monitoring of pollution effects on forests (ICP Forests) and to European Union Schedule on forests protection against atmospheric pollution.

Ecological imbalance of forest ecosystems, caused by their composition and vertical structures being leveled out: approximately 50% of the country's forests are in this state. Consequently, mass forest drying is continuous, as well as felling and breaking caused by heavy winds and snow (in the past 5 years these calamities affected over 10 millions m³ of wood). The reduction of forested areas and their ecological imbalance explains the increased occurrence of floods, landslides and excessive drought. It is a proven fact that in Romania the consequences of natural calamities and global climatic changes demonstrated a growing tendency, thus emphasizing the need forestry in a risky context.

Additional examples may be found, but they all show a disturbing tendency in the state of the forests from a structural point of view, as well as in terms of health and natural vegetation potential. Unfortunately, we can also observe a decline in the field of forestry, visible in the decrease of the volume of forestry works: regeneration, care, protection, ecological rebuilding of stands and access to the forest fund, due to lack of financial resources.

Capacity-Building, Education, Training and Awareness-Raising: At present, there are 24 employees in the Ministry of Agriculture, Food and Forests and 300 employees working in direct subordinated units. National Forest Administration has 36 forestry directorate, 380 territorial forest units and Forest Research and Management Institute and has 38.340 employees. Forest Research and Management Institute have 162 employees, including 30 with doctorate degree. Romania has 3 faculties and 5 colleges with forestry profile. After 1990, 3000 schoolboys exist per year at colleges and 1100 student per year at faculties. One of the aims of Silviculture development strategy is awareness-raising of public, wood owner and politicians about role and importance of national forest patrimony. Public cognizance and education presuppose: school promoting of knowledge about role and importance of forests; involving nongovernmental organizations and mass media in forestry problems; and cognition wood owner of sustainable development principles and criteria. It is very important to assure political and decisional consciousness for sustainable using of forests. Development Silviculture Programme, financed by World Bank, stipulate that will be elaborates a strategy for public involving in forestry problems. At present, public consciousness about forestry role, about its economical, social, ecological and entertaining values

are realized by special campaign (radio, Television, magazine, brochures, posters) supported by National Forest Administration and Ministry of Agriculture, Food and Forests.

Information: Information is accessible at National Forest Administration and MAAP.

Research and Technologies: Forest Research and Management Institute is under National Forest Administration and is specialized for research-projection and for experiments in the field of forestry. Research after 1991 was oriented on wood regeneration, methods and technologies for forest care, ecological forest reconstruction, pollution influence on forests, establish national criteria and indicators for sustainable management of forests, management solution of private forests, biodiversity in forests ecosystems, set up of ecological woods, game species management, etc. Results of these researches are used for technical norms and political substantiation in forestry field.

Financing: National Forest Administration finances by national budget and Forestry activities. Also, voluntary foundations, external grants and credits provide financing.

Cooperation: Romania signed resolutions of European ministerial conferences on forest protection. The country benefits by external technical and financial assistance by PHARE, World Bank Programmes, Japan International Cooperation Agency (JICA) Programmes, FAO Programmes and GEF Programmes.

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: The main institutions involved in the prevention of land degradation and drought effects, rehabilitation of degraded land and reclamation of desertified land include the Ministries of: Agriculture, Food and Forests (MAAP) and its institutions; and Waters and Environment Protection (MWEP); research institutes and county environment protection inspectorates under the ministry ruling; Academy of Agricultural and Forest Sciences (AAFS); and National Forests Administration and its territorial subunits.

The present legislations in Romania, adopted in the last decade, refer to: the problems of protection and amelioration of soil and water resources; and desertification and soil degradation, including: Land Law No.18 /1991, article 61, on both soil amelioration sites within areas with severe soil degradation processes and a special fund; the Government Decisions No.786/993 detailing these provisions, establishing criteria for selecting soils to include in ameliorative sites and the commissions charged with determining these sites; and No.267/1995 on the forming and using of the fund provided for developing these sites; Land Reclamation Law No.50/1994 on the activity of addressing desertification and soil degradation; Environmental Protection Law No.137/1995 on the soil protection, including the authorization of technologies of producing and homologating fertilizers, for which respect, an interdepartmental committee has been set up; Cadastral Law No.7/1996 on the budgetary financing of cadastral activity, such as surveying soil to detect changes in the quality due to desertification and degradation; Forestry Code No.26/1996 on the management of the state and private forests and assures forest, fund integrity and development; Water Law No.107/1996 on the conservation, development and protection of water; Law No.107/1999 which approves Governmental Ordinance on degraded land afforestation No.81/1998 that provides measures for ameliorating by afforestation degraded lands unsuitable for agricultural uses and unproductive lands (badlands); and Law No.111/1998 for ratification of Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification, particularly in Africa. The above mentioned legal provisions are susceptible to completions and updating, can be better correlated among them and need to be adapted to the European Union and other international standards. A draft of the Soil Protection Act is in an incipient stage of preparation.

Programmes and Projects: Romania has 21 project proposals for financing from international Convention To Combat Desertification In Countries Experiencing Drought And/Or Desertification, Particularly In Africa, or other credits amongst which are the following: “Sands fixing and environment conditions improvement by the forest vegetation use in Dabuleni area (Oltenia)”; “Improvement of the structure and functionality of the Dobrogean landscape”; “Ecological reconstruction of the forests affected by the phenomenon of dry, from the arid area of the south-west of Romania”; “Investigation of the soil erosion phenomena, land degradation and sediment yield within the Tinoasa-Ciurea pilot basin, aiming to information transfer at the Moldavian table scale”; “Mitigation of land degradation processes in Subcarpatians induced by deforestation, inappropriate agriculture practices and pollution”; “Farmer-adviser-researcher monitoring, simulation, and communication for best dryland-cropping practice in drought affected areas of Dobrogea and South Moldova”; “Drought monitoring and mitigation in the south part of Oltenia, using agrometeorological and remote sensing data integrated in a GIS”; “Assessment of aridisation-desertification processes in Northern Dobrogea by hydrological modeling at time and space micro-scale”; “Integrated management of the landscape belonging to the areas in Southern

Moldovia and Northeastern Baragan–Romania, territories subject to the aridization/desertification/degradation phenomenon”; “Integrated monitoring of the hydrologic regime, of the water resources and of lands degradation in drought circumstances in Oltenia area”; “Water management of soil in land reclaimed agroecosystems for the irrigation pilot plot of” “the Calafat-Bailesti,” “the Carasu,” and “the Calmatui-Gropeni-Chiscani” systems “under the new conditions of the private Romanian agriculture and the aridity and waste land phenomena control rehabilitation”; “Completion of Sadova-Corabia land reclamation system with forestry, pomicultural and/or mixed shelter-belts in Dabuleni area”; “Accommodation of Boianu-Sticleanu surface drainage system under reversible working conditions (for irrigation) for a better control of the freatic level and for making a favorable microclimate to improve the waste land and aridity tendencies”; “Rehabilitation of the affected surfaces by the dryness and waste land phenomena from the Subcarpathian area”; “GIS for drought and dryness phenomena monitoring in the south-western part of Romania”; and “Correlation of the hydroimprovement works with the agroforestry measures”: “in Dobroudja and Southern Moldavia, and on the sandy soils of Oltenia and Western Plain for preventing and decreasing the negative effects of desertification” and “Influence of the climatic changes on yields and crop water consumption and on irrigation systems functioning within the zones with desertification potential in Romania.”

Status: Romania has a total landed stock of 23.8 million ha, of which 12 million ha agricultural lands (62,2% of the total country’s surface) and 6,37 million ha forests (26.7%). The rest of 2.63 million ha consists of water areas, settlements, communication lines and others (according to the 1998 statistics). The agricultural land is composed of 9.3 million ha arable lands, 3.4 million ha grazing fields, 1.5 million ha hayfields, 0.3 million ha vineyards, and 0.3 million ha orchards. More than half of the country’s forests play an ecological, special protection role of the environment (protection of water, soil, climate, genepool etc.). The area covered by forest has been continuously decreased from 80–85% at the beginning of the Christian era to 26.7% at present (below the European mean of about 33% and smaller by 1/3 than the one considered as being proper to the natural vegetation conditions). The forests are not uniformly spread across the country: only 7% in the plain region, where the climate is aridizing; only 28% in the hills; and 65% in the mountains, the origin of great floods. The diminution of forest area and its weakly condition are, to a great extent, responsible for amplification of the floods, land sliding and other land degradations. It is proved that in Romania the consequences of natural hazards and global climatic changes tend to be ample. These negative influences of the environment and the results of irrational human activities show an alarming dynamics, which has repercussion on the health and life of the human being.

The present data allow a general evaluation of land areas affected by different soil degradation processes. Table 1 presents the affected agricultural land areas (x1, 000 ha) affected and the limitative factors of agricultural use.

Table 1. Agricultural lands affected by different soil degradation processes

No.	Soil degradation processes and limitative factors	Agricultural land	Of which arable land
1.	Drought	7100	
2.	Temporary water logging	3781	
3.	Water erosion	6300	4400
4.	Landslide	702	
5.	Wind erosion	378	273
6.	Excessive content of gravel	300	52
7.	Salinity	614	400
8.	Topsoil compaction		6500
9.	Subsoil compaction		2060

10.	Crusting risk		2300
11.	Low and very low humus content	7178	4445
12.	Moderate and strong acidity	3352	1636
13.	Strong alkalinity	228	121
14.	Low and very low available phosphorus content	6246	2956
15.	Low nitrogen content	4812	1563
16.	Zinc deficiency		1500
17.	Soil removing by different works	15	
18.	Soil covering by solid wastes	18	11
19.	Chemical pollution	900	
20.	Pollution with petroleum and brine	50	
21.	Pollution with air – borne substances	147	82
22.	Other pollution processes	700	

Source: Research Institute for Soil Science and Agro chemistry.

Romania participated in the preparation of the Global Assessment of Human-Induced Soil Degradation (GLASOD) Project, initiated by the International Soil Reference and Information Center (ISRIC), Wageningen-Holland having in view the identification of the state of soil degradation at the world-wide scale. Publishing in 1991, a map at 10,000,000 scale where the lands affected by soil pollution, erosion and physical degradation are mapped. Romania also participated in preparing the SOVEUR Project representing a further detailed presentation of the GLASOD Project for the Eastern and central countries. The data in the Table 1 refer not only to the surface but also to the whole area of the country, offering a general image of this problem. In fact, it may be certain that all types of degradation processes and limitative factors of agricultural production occur within the area characterized by a dry sub-humid climate, even if they are sometimes present in different proportions as compared with those of the country's territory. As for as the present and future evolution of soil degradation processes within the Romania's territory is concerned, including the dry sub-humid area, which is the subject of CCD, they tend to amplify. Thus, with regard to the soil water erosion, about 126 million to of soil represent the annual soil loss on the whole country's territory. Applying chemical fertilizer at a level of 20-50% from the rational requirements leads to a continuous decrease of the available soil nutrient content. Insufficient number of tractors and agricultural machines determines, among others, the delay of normal tillage, especially ploughing, and the compacting and crusting processes. The processes of pollution with basic chemicals coming from industry, livestock, urban activities etc. are continuously present, even if some of them were at a lower degree in the last years. The direct effects of soil degradation within the area affected by desertification are important. Thus, it is estimated that soil erosion causes a crop loss of about 60 kg/ha of cereals for each cm of eroded soil. Experiments of soil compaction show that an increase of bulk density with 0.01 g.cm^{-1} in the arable layer causes a loss of about 133 kg/ha corn (kernels).

Extend of land areas affected by desertification: The existent data obtained from about 100 meteorological stations, many of them being over 100-year-old, show that 17 of these stations located in the east-southern part of Romania (Dobrogea, East Muntenia and South Moldavia) are included in the definition adopted by CCD, characterized by precipitation/potential evapotranspiration ratio situated between 0.05 and 0.65. These areas, composing 2,200 million ha (about 10 %) of the total country's area, included most Dobrogea, eastern Danube Plain, covering mostly arable lands and important part of the wetlands, and some areas in the south-eastern Moldavia. In these areas, characterized by dry sub-humid climate, the risk of soil degradation is various. Of course, the main limitative factor is drought, which affects the whole area. Slope lands affected by soil erosion characterize significant areas, in Dobrogea and

the south-eastern part of Moldavia. Salinity and risk of secondary salinity characterize some lands in the Danube Delta, in the eastern Baragan Plain and in the north-eastern Dobrogea. Some areas, in the northern Dobrogea, include gravel, shallow soils with a reduced volume available to plant roots and with low water capacity. Temporary, excessive water problems occur in the less draughty years within the bottom land of the Danube, and also within some intensively irrigated slope lands in Dobrogea. The low humus content affects significant areas, crusting risk, low phosphorus, and nitrogen content. Soil pollution processes are present near the urban and industrial areas, and the water pollution in the upstream part of the Danube is increasing. Such climatic phenomena have a negative impact on forest vegetation, restricting the natural growing area of some forest species, modifying the vegetation zone limits (shifting the forest steppe to the north and west), and penetrating some Saharan species into the southern part of the country.

Extent of drought effects: According to the Palfay aridity index, nowadays used to identify droughty areas, the areas with values of this index higher than 6 are considered as droughty. Thus, the index values between 6 and 8 characterize moderately droughty areas where the frequency of drought years is of 40-65%. But a more reduced frequency of droughty years is also within areas with Palfay indexed lower than 6. The area with the Palfay index between 6 and 8, sensibly larger than the area directly subjected to desertification processes, covers about 40% of the country's agricultural area, the southern, south-eastern and eastern part of the country. The area with the Palfay index between 4-6 covers other 20% of the country's agricultural area, especially in the southern and south-eastern part of the country, but also in the western and central parts. The drought phenomenon, without having a very strictly cyclic character, occurs every 12-15 years, during these periods existing extremely droughty years but also some breaks (1-3 years) with sufficient precipitation. In the last century, extremely droughty periods occurred in the following intervals: 1894-1905; 1942-53; and 1982-96, with extremely droughty years in: accordingly, 1897; 1946 and 1947; and 1988 and 1991, where the drought occurred on a larger area than in the earlier intervals. Under the hydrological aspect, the drought periods, with reduced discharge of rivers, succeed more rapid than periods of meteorological drought, are more frequent but shorter as well. Such periods occurred especially in 1894-1900 and 1961-65 in Transylvania and in 1943-52, 1958-46 and 1982-93 in Oltenia, Muntenia, and Moldavia. The drought effects on the agricultural crop and yield are proved by statistical data regarding the yield obtained in different years with specific climatic characteristics. For example, in the last decade, winter wheat production varied, at country level, between 4 and 7 million tons. Nonetheless, these data are insufficient for a specific analysis of drought and its causes and effects, because there are other factors influencing the crop. A more correct analysis can be obtained through data on long-term experimental fields with irrigated crops, as the yield in irrigated variants are not affected by drought, while those in non-irrigated ones show negative effect of drought. Very difficult problems regarding the existence, conservation and evolution of forest vegetation and landscape, with baleful effects on social and economic activities, are concentrated in hill and plain areas, where the impact of drought, the fragile lithologic substratum and the small forest area are unhappily associated. In this respect, the most affected counties, (Dolj, Olt, Galati, Braila, Ialomita) are in south and east, located below 450 parallel and at east of 270 meridian. In these counties the decline phenomenon of forest appears to be strong, affecting severely the forest ecosystems of *Quercus* sp. (in the plain), *Salix* sp. and *Populus* sp. (on the inner river meadows). Through disappearance of the forest on large areas, in the eastern and southern parts of the country, and the intense degradation of existing forests, not only the social but also the economic life is affected. In the same time, a very important living barrier in front of advancing of the Euroasiatic steppe towards Central Europe is gradually disappearing.

Capacity-Building, Education, Training and Awareness-Raising: The Romanian National Committee for Desertification will be organized. The Committee will elaborate national strategy and projects for controlling desertification and drought, periodically update this strategy, monitor and forecast soil and water quality within the area affected by desertification, prepare a draft for new acts, obtain financing resources, disseminate to the public problems regarding desertification and drought for getting it sensitive to these phenomena and supervise international cooperation. Knowledge dissemination and education of the population regarding the problems of desertification, land degradation and drought are an important for improving the way of approaching these problems at which the state participates with direct contribution.

Information: MAAP and its subordinated institutions, and MWEP provide Information.

Research and Technologies: Research carried out by institutes and central stations, coordinated by AAFS, "Gheorghe Ionescu-Sisesti," deals with various aspects of drought, desertification and soil degradation. Analyses have been performed on the climatic, hydrological (National Research–Development Institute of Meteorology and Hydrology) and pedological (Research Institute for Soil Science and Agrochemistry) factors of drought, on the effect of drought, desertification and soil degradation on soil and water resources, forests (Forest Research and Management Institute) and yield of agricultural crops. Cropping technologies have been elaborated both under irrigation and non-irrigated conditions, including solutions referring to crops, cultivates and hybrids, soil and fertilization, management (Research Institute for Cereals and Industrial Crops), irrigation regime and watering techniques (Research and Technological Engineering Institute for Irrigation and Drainage). The existent irrigation schemes have been assessed based on efficiency, and solutions for modernizing viable irrigation systems have been worked out (Institute of Study and Design for Land Reclamation). Mathematically simulation models have been introduced for predicting the soil moisture regime and the drought effects, and analyzing the factors determining these effects. It should be noted that, in 1995-98, an ample multidisciplinary research programme was developed, involving 14 research institutions, which synthesized the present stage of research regarding drought and the decrease of its effects. Romania has published soil maps, which are under digitizing process within the geographical informational system at the 1:200,000 for all the Romanian's territory, and unpublished soil maps at 1:50,000 and 1:10,000 covering all the agricultural land area. There is a data bank of 4,000 representative soil profiles. The first stage of soil quality monitoring action has been finished samples of almost 1,000 soil profiles located in an equidistant network, according to the methodology adopted at the European level, being assayed.

Financing: The National Report on the implementation of the UNCCD details the financial requirements from national budget and external assistance for ecology re-building programme by silvicultural means during 2001-50. In the current year budget (2000) 450,000 US\$ and 5,000,000 US\$ are allocated for degraded land reclamation and re-afforestation, respectively. Romania will contribute yearly to the SAPARD Programme with 75,000,000 US\$, of which, about 20% will be destined to the rural communities settled in areas affected by drought and aridization.

Cooperation: The International Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification, particularly in Africa was signed and ratified. Romania's cooperation is achieved by: participation in elaborating studies, strategies and technological recommendations; access to information in the international data bases; obtaining support to elaborate and realize some concrete projects referring

also to the Romania's territory; and participation of Romanian experts in projects located in other geographical areas. At the same time, Romania is interested to participate in actions with regional character concerning the Balkan, Carpathian and Danubian, and other zones, adjacent to Romania's territory.

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Chapter 13: Managing fragile ecosystems - sustainable mountain development

Decision-Making: Starting in January 2001, the National Agency for the Mountain Areas (ANZM) was re-established within the Ministry of Agriculture, Food and Forests (MAAP). ANZM is a specialised division within MAAP, working as a public institution, it is not a juridical entity and it is subordinated to the state secretary for rural development. At the level of the 28 counties with mountain areas we established services of the mountain area, within the General Divisions for Agriculture and Food Industry. In September 2001, MAAP also initiated a Government decision draft, "Mountain Law" draft, concerning the organization and functioning of the National Agency for the Mountain Areas, as a public institution with juridical entity, subordinated to the MAAP. This draft still needs to be finalized. See also under **Status**.

Programmes and Projects: In August 2001, the National Agency for the Mountain Areas conceived and submitted for the approval a programme of sustainable development and protection of the mountain population and environment, for the period 2002–2004; this programme is in connection to the "Mountain Law" draft.

Since September 2001, CEFIDEC-Vatra Dornei have started the programme financed by the World Bank, a programme created for training of 750 young mountain farmers, for the period between 2002 and 2004. SC "CEDER"-Sibiu (Mountain Institute) benefits from a research–development programme for the mountain area, financed by the World Bank.

We are still working at some development projects for beneficiaries from the mountain area. These programmes are within the European Commission's SAPARD programme.

Status: One of the Government's concerns is also the situation of the Romanian mountain agriculture and environment, environment that represents 33% of the national territory, is populated with more than 3.6 millions inhabitants and have more than 1 million farms, most of them being of subsistence type: the mountain area's agricultural production is obtained from more than 3.2 million ha and is based on animal breeding and on the fodder base provided by the 2.5 million ha of pastures and natural grasslands. This type of agriculture is done extensively and the obtained products are of ecological type, as the Romanian mountain agriculture is not "touched" by the use of chemicals; and the forest vegetation is rather good, the afforestation degree exceeding 60%. In the last ten years, due to numerous causes, the livestock, especially the number of cows and sheep, dramatically reduced. At the same time there was a great decrease of the quantity of natural fertilizers and this aspect has a negative influence on the composition of the natural pastures' fodder flora. The loss of many jobs and the fact that living in the mountain area was more and more expensive generated a drastic decrease of the small farmers' incomes and also led to a situation like never before: off all the European mountains, the Romanian mountain rural population had the highest degree of poverty.

It is under these circumstances that the Government decided to reestablish ANZM and to include a "Mountain Law" draft as priorities. The ANZM conceived a strategy of sustainable development of the mountain area with the following objectives: sustainable development of the mountain private farms, especially of the commercial ones by modernising and enhancing the breed (grow) capacity and by diversifying the vegetal and animal productions, using extensive and semi-extensive systems, but within the limits of sustainable ecological practices; better use of mountain rural resources, based on quality and added value, by development of small and medium enterprises and of agri-tourism; mountain

environment protection and social protection, by granting of “natural allowances for natural disadvantages” (ICHN, an European Union’s system), by supporting the young families and by conceiving of a system for retirement and against poverty; adapting the educational system for the mountain rural agriculture to the mountain area’s specific features, development of continuous training for grown-ups and of applied scientific (mountain) research; establishment of governmental and non-governmental organizations (NGOs) specific for the mountain areas; and establishment of professional farmer organizations in the mountain area.

There are 3 NGOs successfully functioning in the mountain area: Mountain Farmers’ Federation, Dorna (with Germany, 1994-2001); FAER, Reghin (with Switzerland 1991-2001) and Mountain Tourism Association, Prahova (with Switzerland 1995-2001).

Capacity-Building, Education, Training and Awareness-Raising: Training and Innovation Centre for Development in the Carpathians (CEFIDEC-Vatra Dornei) was established in 1999 as a decentralized public institution, with juridical entity, under the MAAP and coordinated by the National Agency for the Mountain Area. CEFIDEC is in charge of training agricultural specialists from 820 mountain localities on mountain rural development’s specific features. Since 2001, it has been the beneficiary of a programme financed by the World Bank created for training mountain young farmers. By law, CEFIDEC is a paying member of the European Association of the mountain regions, “EUROMONTANA,” as a representative of MAAP. It is also a member of the National Association for Mountain Rural Development, “ROMONTANA,” which was established in 2000 at the initiative of “EUROMONTANA” as a NGO with juridical entity, part of the South Eastern European network (SEMNET) bringing together main governmental and non-governmental actors of the mountain area, actors who confirmed the utility and viability of their actions in favour of mountain area’s development and protection. Switzerland gave a first financial support to the programme. ANZM together with CEFIDEC, SC CEDER, Sibiu on one hand and FAM “Dorna” and FAER Reghin on the other, has a conceptual building, education and training capacity to contribute to awareness-raising on remarkable mountain area’s specific features and issues. Continuous involvement in the European association of mountain regions since 1991, governmental and non-governmental contacts with institutions from France, Germany, Switzerland Austria, Great Britain, Italy, Greece, Poland Slovenia and so on, mutual, bilateral programmes as well as a PHARE programme-designed for the mountain area’s of four counties, with 54 pilot-station projects completed, participation to activities organized by the European Council, European Commission, UN-FAO, European Parliament, World Mountain Forum and so on, all these have contributed to training of specialists and right orientation as far as the mountain areas are concerned, in the sense of Romania’s preparation for the accession into the European Union. Accumulation of knowledge and numerous activities initiated and finalised in Romania have demonstrated a greatly increasing capacity-this refers to education, training and society’s awareness about the needs, methods and possibilities of mountain areas.

Information: We can say that our information level about the European mountain areas and policies and the new preparations to make the enlarged EU’s mountain policy official is rather good.

Research and Technologies: SC CEDER-Sibiu (mountain institute), CEFIDEC Vatra Dornei and universities with agri-mountain sections have some expertise on applied research and specific agricultural technologies, but unfortunately not enough. MAAP is preparing the normative act for re-establishing the Mountain Institute Cristian-Sibiu, specialized on R&D. From 1992/93, there are 3 agri-mountain sections with the agriculture faculties of the Agricultural Sciences and Veterinary Medicine Universities of Iasi, Cluj and Craiova, two mountain faculties with the Universities of Sibiu and Targoviste, a mountain agri-

tourism college with the Alexandru Ioan Cuza University Iasi, functioning in Vatra Dornei, and a number of 5 agri-mountain secondary schools in the Arges, Brasov, Prahova and Suceava counties: CEFIDEC-Vatra Dornei, FAM-“Dorna,” FAER-Reghin, SC “CEDER”-Sibiu (Mountain Institute), all these are paying members of “EUROMONTANA.”

Financing: ANZM, including its network of mountain area services (within the County General Divisions for Food and Agriculture), and CEFIDEC are two public institutions entirely financed from the national budget. The non-governmental institutions (FAM “Dorna,” FAER-Reghin, ATM-Prahova, ANDRM “ROMONTANA”) have been financed through bilateral cooperations. For the time being, SC CEDER-Sibiu (Mountain Institute) is an enterprise. The European Commission financed the PHARE programme, with 54 projects, “pilot-stations,” implemented in the mountain rural areas of Alba, Bistrita-Nasaud, Harghita and Suceava counties, with technical assistance from a French-German cooperation group.

Cooperation: The National Agency for Mountain Areas and CEFIDEC has a cooperative agreement even at national level, including ministries and institutions concerned about the mountain area, and joint actions (completed or still in progress). There is also cooperation with the National Association for Mountain-Rural Development “ROMONTANA,” the European association of mountain regions “EUROMONTANA,” European Commission, European Association of Mountain Elected People (AEM), World Mountain Forum, European Mountain Forum, and representative organizations from France, Spain, Italy, Great Britain, Switzerland etc.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The Ministry of Agriculture, Food and Forest is responsible for policies, strategies and legislation on agriculture at national level. Agriculture is considered a strategic national priority in the National Medium-term Development Strategy of the year 2000. A key governmental objective is to ensure food security and rural development.

Romania is making an effort to harmonize agricultural and agro-environmental policies with the rest of the European Union: the National Plan for Agriculture and Rural Development drawn up by the Agency for Regional Development under the pre-accession EU programme SAPARD was presented by Romania in October 2000.

Poor rural communities will get special support, as will: measures will be taken to improve infrastructures, processing, vocational training, and marketing, including of non-agricultural or traditional products, to help set up producing groups (200 with 5,000 farmers), to ensure agricultural production methods designed to protect the environment and maintain the countryside, and the diversification of activities, and to improve forestry.

The government has reemphasized a commitment to public administration reform and decentralization in its programme. National level focus for improving local administration and service delivery has shifted to a new body, the Ministry of Public Administration, which has separate departments dealing with local government units (counties and communes), service delivery, and EU accession.

Programmes and Projects: The special programme for less-favored areas, "Assistance for agricultural activities in rural area" was adopted by the DG no. 522 of the 22nd of June 2000 and has for purpose to grant financial non-reimbursable aid for purchasing machines and equipment for agricultural productive activities or specific services.

Rural Development Programme, which is financed by World Bank, is a seven-year programme aiming to improve rural livelihoods and living standards in target areas by increasing the availability of infrastructure and related public investment goods, while enhancing the capacity of local administration and communities to initiate, plan and coordinate local investments. It will thus contribute to implementation of the recently revised Law on Local Public Administration, which establishes the autonomy of counties and local councils (the latter including towns and communes) and assigns ownership of and responsibility for local roads, and local services (including water) to the sub-national administration. The Programme will also assist implementation of the Law on Local Public Finance by supporting implementation an equalization formula, which provides the basis for general revenue allocations to counties and local councils. The Programme involves: successful completion of TA/training and project development activities in 5 pilot counties, and 100 pilot communes in four modules, as measured by training effectiveness: results of post training evaluations by training recipients; outside expert assessments of training effectiveness; satisfactory completion of at least 200 locally initiated infrastructure subprojects in target communes and communities; and implementation of a formula for equalization of grants from counties to local councils in pilot counties.

Status: A priority for the Romanian Government is the sustainable development of agriculture, which includes the following objectives: decreasing the use of chemical fertilizers; increasing the use of natural fertilizers; and land reclamation works and using adequate technology for the privatization of agriculture. A special effort is being undertaken by the Forestry and Agriculture Academy, which coordinates certain programmes of sustainable agriculture. There are regulations regarding the utilization of chemicals in

agriculture according to environmental laws and scientific research. Soil resources in Romania are extremely important because 62% of the total area of the country is agricultural land. Agriculture contributes 20% to the national income. Non-agricultural lands grew by 400,543 ha between 1989 and 1994; about 246.126 ha of this area are covered with buildings, roads and non-productive lands. The agricultural lands productivity is diminished by 20-30% due to certain limiting factors as chemical pollution due to the unreasonable utilization of fertilizers and pesticides, emissions of heavy metals and hydro carbonates. In drought periods, agricultural productivity diminishes severely in the affected areas.

Capacity-Building, Education, Training and Awareness-Raising: In the Government Programme there is a section related to institutional reform concerning agriculture and the food sector. This is necessary to speed up the reforms and to bring about the convergence of legislation and agricultural policy measures with those used by in EU countries.

The material endowment in the rural education system, expressed in quantitative terms, does not seem favourable. Rural life conditions are not attractive for the teaching personnel, thus in many low developed areas the qualified teaching personnel leave the rural and personnel with inadequate training replace them. Only 1 of 100 village inhabitants graduated a higher education institution. Most of the graduates of higher education institutions live in cities. Only 10% of these chose to live in the rural area. The effects of this situation are multiple: economic activities are not diversified, the agriculture is non-efficient, (it does not make use of modern technique and technologies), and the hygiene-sanitary situation of the dwelling is low, mortality rate is high.

Agricultural education holds a very low share in the Romanian educational system. Agricultural profile graduates at all levels of education represent a very low share in the total of graduates, much under-sized compared to the importance of agriculture for Romania's economy.

Information: Can be provided by Ministry of Agriculture, Food and Forest and Ministry of Public Administration

Research and Technologies: Scientific research in agriculture and food industry: The scientific research reform programme in agriculture and food industry is aiming at content reorganization of the research and marketing, extension and technological transfer of the research results to the major segment of the private farmers. Another major goal is the institutional reorganization to meet the current requirements of the agricultural ownership new structure. The research is focused on the need to preserve and improve soil and water since they are essential elements for a sustainable agricultural and food industry. Programmes will cover the prevention and control of pests of all kinds, measures to deal with extreme weather conditions, with a view to avoiding or reducing negative environmental and economic effects. These programmes will also take account of the need to enhance the competitiveness of the food sector in Romania, the need to harmonize product standards with those in the EU and to raise Romanian living standards. Expected impacts include: increasing number of the promoted projects for the development and strengthening of the National Plan for Agriculture and Rural Development main objectives; re-guidance and focusing of the bilateral relations, especially with Member States, on the mutual interest objectives; and Increasing the domestic, public and/or private, co-financing capacity.

Financing: *Local Government Finance:* Recent legislative reforms have fundamentally changed intergovernmental fiscal relations and the structure of the finances of the county and local councils. In particular, the 1998 Law on Local Public Finance put local finances and the local budget process on an equal legislative basis with those of the national government. The law introduced revenue sharing, it

expanded local control over locally generated revenues, and it authorized local councils to administer their own taxes. The new law also simplified the transfer system, and replaced the general transfer with an equalization grant that aims to correct the difference in expenditure responsibilities and fiscal capacity among the county and local councils. The intent of the new legislation was to strengthen local fiscal autonomy by clarifying and expanding local control over revenues, expenditures, and the local budget process. Progress in meeting this objective has been limited due to the reintroduction of dedicated transfers and changes in the rules on revenue sharing.

Cooperation: Mainly with the European Union by pre-accession instrument SAPARD and PHARE

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: Responsibility for biological diversity conservation and natural protected areas is with the Ministries of: Waters and Environmental Protection; Public Works, Housing and Transports; Agriculture, Food and Forests and local authorities. Responsibility for the sustainable use and conservation of biological diversity lies with the Ministry of Waters and Environmental Protection, the Ministry of Agriculture and Forests and Local authorities. Into the frame of the Ministry of Waters and Environmental Protection is working the Directorate for Biodiversity Conservation and Protected Areas Management. The Government in consultation with organizations, the scientific community, local authorities, and professional NGOs undertake decision-making.

Legislation has been passed covering all of the issues related to biodiversity conservation, consistent with international agreements and standards, including: Law of Environmental Protection no.137/1995; Law of Waters no.107 /1996; Law of Hunting no.103/1996; Law of Fishing no.192/2001; and the law for the natural protected areas management, natural habitats conservation, wild flora and fauna has been elaborated and adopted (Law no.462/2001). The National Strategy for Biodiversity Conservation and the National Plan for Biological Diversity Conservation have been established. The strategy is one of the principal elements of the Environmental Strategy for Romania. This Strategy covers biodiversity protection and sustainable use and protected areas management guidelines.

Programmes and Projects: Major programmes at the national level include: the National Actions Programme for Environmental Protection and the National Action Plans for Biodiversity Conservation and Sustainable Use of its Components. For implementing the management plans in order to ensure a favorable status of conservation, both for wild species and natural habitats within the protected areas, there were developed several main programmes and projects, as follows: Danube Delta Biodiversity Conservation (1995-2000), financed by GEF (4,5 million US\$) and the Government (450,000 US\$), involving: strengthening the institutional and operational capacities of the Warden Department from "Danube Delta" Biosphere Reserve Authority; elaborating and implementing a monitoring programme through improving the species inventory methods, ecosystem's survey and the establishment of a data base and developing an integrated data base by using the GIS system for ensuring the base for the elaboration of the plans for natural resources management; implementing a ecosystems' restoration programme; public awareness and community and local NGOs involvement in ecological protection activities; and Biodiversity Conservation Management (1999-2004), financed by GEF (5.5 million US\$) the Government (2.4 million US\$) and National Administration of Forests (0.9 million US\$), including: the National Framework for Biodiversity Conservation; Models for Protected Areas and Forest Park Management; and Public Support for Biodiversity Conservation.

Beginning with 1999, by LIFE-Nature Programme was financed the following projects:

Project	Beneficiary	Total cost (EURO)	LIFE (%)
Integrated management plan for "Small Island of Braila"	Department of Systems Ecology/ Bucharest University	190.007,5 2	75
Conservation of the Natural Wet Habitat "The Bogs of Satchinez"	Timis Environmental Protection Agency	127.449,7 2	75

Habitat Conservation in the National Bucegi Park	Brasov Environmental Protection Agency	122.967,23	75
“In situ” conservation of the Romanian Meadow Viper (<i>Vipera ursinii</i>)	“Delta Dunarii” National Institute of Research-Development	255.877,20	50
Survival of <i>Romanichthys valsanicola</i>	Bucharest Institute of Biology/ Romanian Academy	201.207,96	75
Conservation of an Euro-Siberian wood with oak (<i>Quercus robur</i>)	Brasov County Council	80.664,39	75
Enhancement of Piatra Craiului National Park	Forest Research and Management Institute	274.448,33	75
Combined actions for the protection and the development of the Apuseni Mountains natural heritage	Brasov County Council	475.161,00	42,3

In 2000 was send 19 LIFE-Nature projects, 4 of these approved by European Commission:

Project	Beneficiary	Total cost (EURO)	LIFE (%)
“Iron Gates” National Park – habitat conservation and management	Bucharest University	389.392	60
The functional ecological network in Transilvania Plain	Cluj Environmental Protection Inspectorate	600.000	75
Conservation Programme for Bat’s Underground Habitats in SW Carpathians	Green Cross Romania	339.393	50
Conservation of the dolphins from the Romanian Black Sea waters	“Grigore Antipa” National Institute of Marine Research-Development	416.630	50

In 2000 Romania signed the Declaration on the cooperation and creation of the Lower Danube Green Corridor (Bulgaria, Moldova, Romania and Ukraine) with financial and technique support from World Wide Fund (WWF) and the Agreement on the establishment and joint management transboundary protected areas in the Danube Delta and the Lower Prut River (Moldova, Romania, Ukraine), with support of Council of Europe. For this reason was developed a study on the areas from Romanian sector to be included in the Lower Danube Green Corridor.

The total surface is 870 000 ha, including:

Natural protected areas (713,385 ha): “Iron Gate” National Park: 115656 ha; Ciuperceni-Desa Reserve: 200 ha; “Small Island of Brăila” Natural Park: 17529 ha; and “Danube Delta” Biosphere Reserve: 580000 ha.

Unprotected wetlands (20,446,6 ha): Danube between Ciuperceni-Rast: 2590 ha; Mare and Turcesc Island: 229,1 ha; Arcalia Island: 26,5 ha; Pietris Island: 40 ha; Vana Island: 105 ha; Danube 587-636,1 km: 4863 ha; Cama-Dinu Islands: 196 ha; Bugeac Lake: 1400 ha; Oltina Lake: 2509 ha; Marleanu Lake: 550 ha; Vederoasa Lake: 230 ha; Baci Lake: 200 ha; Hazarlac Lake: 268 ha; Peceneaga Lake: 40 ha;

Turcoaia Pond: 310 ha; Sarat and Slatina Lakes: 150 ha; Jijila Lake: 2500 ha; Fundu Mare Island: 1899 ha; Macin-Smardan Lake: 230 ha; and Brates Lake: 211 ha.

Areas proposed for ecological reconstruction (161 883 ha are): Sesul Blahnitei complex- Corbului Island: 1981 ha; Garla Mare-Salcia: 1681 ha; Incinta Bistret-Nedelea-Jiu: 1080 ha; Potelu Complex: 23330 ha; Suhaia Complex: 17490 ha; Greaca Complex: 33819 ha; Calarasi-Raul Island: 13050 ha; Crapina Complex: 10000 ha; Pardina Complex: 27052 ha; and Lower Prut area: 32400 ha. In the year 2000, Ministry of Waters and Environmental Protection, with financial and technical support of the Council of Europe, developed the project “Emerald Network in Romania” for identification and characterization of Bern Convention Resolutions 4/1996 and 6/1998 wild species and natural habitats existing in Romania. With the BIOTOPE Programme, Romania takes part in the CORINE Programme, including plants and birds. Among protected plants: Tisa (*Tasux baccata*); Edelweiss (*Leontopodium alpinum*); the Lady’s Slipper (*Cypripedium Calceolus*); the Romanian Peony (*Paeonia peregrina*); Protected birds include the Bustard; the Mountain Cock; and the Mountain Aquilla. Of the 3,800 species of plants existing in Romania several decades ago, 23 have been declared “Natural Monument,” 290 are vulnerable, 185 are threatened with extinction and 17 have already disappeared. The decrease of biological diversity could contribute to the decreasing productivity and resistance of the biological community.

Status: In 2001, the Romanian Network of Protected Areas included 827 sites, declared by Law 5/2000, in concordance with the rules of International Union for Conservation of Nature (IUCN) and of the bases of studies approved by the Romanian Academy.

Nature conservation designation types are: Scientific Reserve; National Park; Nature Monument; Nature Reserve: botanical; zoological; geological; speleological; palaeontological; forests; and mixed; Natural Park; Biosphere Reserve; Wetland of International Importance; World Natural Heritage Site; Special Area for Conservation; and Special Protected Area. The Ministry of Waters and Environmental Protection administers the Romanian Network of Protected Areas in conformity with sustainable development principles. These areas include a lot of natural habitats and species found in both Directives and in the Annexes of the conventions ratified by Romania.

The total surface of protected areas, 1,234.710 ha, represent 5,18% of the national territory surface. From the Romanian Network of Protected Areas, the Danube Delta with a triple statute of Biosphere Reserve, Ramsar Site and Site of World Natural and Cultural Heritage (580.000 ha), characterized by a unique and high biological diversity, is one of the most important protected area on Earth.

	<i>Surface (ha)</i>	<i>%</i>
Total surface of protected areas	1,234,608.12	100%
Scientific Reserves, Natural Reserves, Nature Monuments	102,433.32	8%
National Parks, Natural Parks, Biosphere Reserves	1,132,174.80	92%
<i>Out of which</i>		
Danube Delta Biosphere Reserves	580,000.00	47%
The others National Parks and Natural Parks	552,174.80	45%

Capacity-Building, Education, Training and Awareness-Raising: Two of the main components of the project are: Strengthen the National Framework for Biodiversity Conservation; and build public support for Biodiversity Conservation, aiming to strengthen the protected areas management capacity of the Directorate for Biodiversity Conservation and Protected Areas Management from the frame of Ministry of Waters and Environmental Protection and capacity building of the National Administration of Forests. The following are important components in the project on “Biodiversity Conservation Management”

(1999-2004), financed by GEF (5.5 million US\$), Romanian Government (2.4 million US\$) and National Administration of Forests (0.9 million US\$).

Information: Information on biological diversity is available through the National Reports of statement of natural habitats, wild flora and fauna and protected areas network, an integral part of the yearly National Report of the Environmental State in Romania.

Research and Technologies: There is a broad academic network working in the field of biodiversity conservation: Romanian Academy/Natural Monuments Committee; History of Nature Museum “Grigore Antipa”; Research-Development Institute - Danube Delta; Marine Research-Development Institute; Speology Institute; Geography Institute; Biology Research Institute; Research and Management Planning Institute, Botanical Gardens and Universities.

Financing: Financing for biodiversity conservation is provided by the national budget, LIFE Nature Programme, external assistance and by other sources (nationals companies).

Cooperation: Romania is Party to the following international agreements: The Convention concerning the protection of the world cultural and natural heritage (Paris, 1972), accepted by Decree 187/1990. On the “World Heritage List,” Romania was put down with approximately 45% of the Danube Delta; the Convention on wetlands of international importance especially as waterfowl habitat (Ramsar, 197), ratified by Law 5/199. The Danube Delta was declared Ramsar Site; The Convention on the conservation of European wildlife and natural heritage (Bern, 1979), ratified by Law 13/1993; Convention on biological diversity (Rio de Janeiro, 1994) ratified by Law 58/1994; and The Convention on conservation of migratory species of wild animals (Bonn, 1979), ratified by Law 13/1998. Based on the Article IV of this convention which stipulate that the migratory species listed in Annex II required international agreements for their conservation and management, was elaborated, signed and ratified the following agreements: Agreement on the conservation of African Eurasian migratory waterbirds (Haga, 1995) ratified by Law 89/2000; Agreement on the bats conservation in Europe (Londra, 1991) ratified by Law 90/2000; and Agreement on the conservation of cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area (Monaco, 1996) ratified by Law 91/2000.

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

Decision-Making:

Biotechnologies: No information available.

Technologies: A National Agency for Technology Transfer has recently been created in the Ministry of Education and Research to support the practical application of the results of its own research. Technology transfer is based on trade, especially through environmental protection investments. International convention secretariats are also sources of information. In the Ministry for Water and Environmental Protection there is an Office for Information and Documentation, connected to the Internet. A national information network also exists in the Ministry of Research. The environmental law has created the framework to promote certain clean production processes. At the national level, the National Action Plan in the field of the environment has been promoted. The implementation of this Plan also requires the transfer of technology. The Ministry of Education and Research has responsibilities in this field. So as to promote certain environmental investments that are supposed to include transfer of technology, small and medium sized enterprises will benefit from a 50% increase in tax benefit if their investments are in the environmental field. Presently, based on the environmental law, regulations have been worked on to promote economic incentives to stimulate those firms, which have environmental investments. The state has stimulated such investments in environmental "hot areas." A national system of standards has been organized, and the Network of Accredited Laboratories in Romania and the Account Book for Accreditation provides an accreditation system for laboratories and quality certification. At present, Romania is adopting the ISO standards and there are concerns regarding the application of ISO 14000. The Environmental Protection Agencies will follow-up with the economic agents in this field. See also under **Status**.

Programmes and Projects:

Biotechnologies: No information available.

Technologies: See under **Decision-Making**.

Status:

Biotechnologies: No information available.

Technologies: Environmentally Sound Technologies (ESTs) are most urgently needed in the energy and agriculture sectors as well as in the pulp and paper industries, the cement industry and the non-ferrous smelting industry. A copyright Law is in place but no reference is made in it to the promotion of investments related to the transfer of ESTs. To date there is no national policy or effort by the private sector to promote the transfer of ESTs or cleaner production processes.

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

Biotechnologies: No information available.

Technologies: No information available.

Information:

Biotechnologies: No information available.

Technologies: In the field of transfer of technology, there is a need to increase cooperation between countries. It is also important to put into practice the various studies, analyses and evaluations in order to solve concrete problems. It is our opinion that in the future we should focus on finding specific mechanisms that can contribute to a better approach in the field of transfer of available technologies and through activities implemented jointly under the environmental conventions.

Research and Technologies:

Biotechnologies: Some special concerns exist regarding research in the field of agriculture and animal breeding.

Technologies: No information available.

Financing:

Biotechnologies: No information available.

Technologies: No information available.

Cooperation:

Biotechnologies: No information available.

Technologies: No information available.

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

Decision-Making: Responsible for the integrated coastal zone management and sustainable development are the Ministries of: Waters and Environmental Protection (MWEP); Public Works, Transports and Housing; Agriculture Food and Forests (MAAP); Tourism; Industry and Resources; and Public Administration and local authorities. Marine environmental protection is managed by MWEP in collaboration with MAAP and the ministries of: Industry and Resources; Public Works, Transports and Housing and local authorities. Responsibility for the sustainable use and conservation of marine living resources lies with the ministries of Waters and Environmental Protection, and Agriculture, Food and Forestry, and local authorities. MWEP coordinates National Institute for Marine Research-Development “Grigore Antipa,” which has experience in monitoring and research of Black Sea by using of European technical drawing. Also, researcher from National Institute for Marine Research-Development “Grigore Antipa” participated at meetings for ground and elaboration of plans and programmes for Black Sea Environment Programme. The Government in consultation with undertakes decision-making: different organizations; scientific community; local authorities; and professional NGO.

Law requires consultation with the public in environmental impact assessments. Legislation has been passed covering all of the issues related to oceans and seas. These are consistent with international agreements, decisions, rules and standards and include: Law on Legal Regime of the Inland Maritime Waters, of the Territorial Sea and of the Contiguous Zone of Romania, no. 17/1990; Law of Environmental Protection no.137/1995; Law of Waters no.107/1996 and Law of Fishery no.192/2001. The Government in consultation with different organizations, scientific community, local authorities, and professional NGOs undertake decision-making. Law requires consultation with the public in environmental impact assessments.

There is underway a National Strategic Action Plan for Protection and Rehabilitation of the Black Sea - NSAPPRB - developed under the coordination of the Black Sea Environment Programme, started in 1993 under the auspices of GEF with World Bank funds and the EU PHARE and TACIS programmes as major partners. This Strategy covers integrated coastal zone management and sustainable development, marine environment protection, sustainable use and conservation of marine living resources, contingency planning against pollution and cooperation among all Black Sea basin states.

Programmes and Projects: Major programmes at the national level include: the National R&D Programme “Environment and Climate” which will be approved by Governmental Decision; the National Action Programme for the Environmental Protection, finalized and approved; the National Plan for Preparedness, Response and Cooperation in case of accidental marine pollution with hydrocarbons, in course to be legally approved; and the National Action Plans for Biodiversity Conservation and Sustainable Use of its Components. At the regional level, the major programme is the Black Sea Environment Programme/GEF.

Major projects and activities underway, or planned to address the issues cited above include the following: assessment studies for decreasing the local sources of pollution; technical and functional refitting of Constanta harbor, in particular, those activities related to the collection and elimination of wastes; development and implementation of the National Plan in case of accidental marine pollution with

hydrocarbons; building of an institutional framework for carrying out all the management measures for the coastal zone established by the National Strategic Action Plan for the Black Sea; treatment station with incinerator facility for oily wastes on the petrochemical platform of the “PETROMIDIA” Company; retechnologization, modernization and extension of the Constanta Sud treatment station for urban waste waters; Collecting, stoking and treatment technologies from waste waters resulting from ships and Constanta Oil Terminal storage tanks; and modernization of the Constanta Nord treatment station for urban waste waters and treatment station for urban waste waters of Mangalia resort.

Status: The Black Sea in the area of the Romanian seaside is subject to a polluting process due to the polluters in the Danube basin and other basins, by direct discharges of used waters or of waters that were insufficiently treated or not treated at all and also due to the intensive harbor activity throughout Black Sea perimeter. During the last decades, the Black Sea ecosystems underwent certain changes. The structure and the primary, secondary and tertiary biomass ratio were changed, the migration of certain prey fishes from Marmara Sea waters diminished, while the populations of sturgeons and dolphins are no longer as numerous as they used to be.

The primary sources of land-based pollution of the marine environment are urban and industrial activities, mainly through Danube. The primary sources of sea-based pollution of the marine environment are shipping and harbor activities and off-shore oil exploitation. Other problems arise from beach erosion and over-fishing by some Black Sea riparian countries.

The most important coastal urban areas are Constanta, Mangalia, Sulina and St. Gheorghe with over 1.000.000 inhabitants, in total. The major economic activities in these areas include tourism (over 1 million persons/ year), fishing (about 3.000 tones/year), off-shore oil exploitation, transport and processing, industry (chemical, food and shipyards). The percentage of the economy related to fishing is about 0.007% of GDP (~ 2 million US\$/year). Methods in place to encourage sustainable use and conservation of marine living resources include: Evaluation of the marine living resources; Establishing rules and standards relating to exploitation of these resources; and Licensing of fishing based on the fishing quotations. The impact of shipping on the sustainable management of coastal zones include: Marine water pollution particularly in the bathing area; Introduction of some foreign species through the ballast waters (the most recent example: ctenophore *Mnemiopsis leidyi*); Affected biocenoses by using rocks in the hydro technical construction of harbors; and the extension of harbor installations on land and water. The impact of other coastal and marine related industries (including tourism) on sustainable development of coastal areas includes: eutrophication; raising of pathogen germs concentration in certain sectors (during summer time); and pollution with oil residues from the off-shore oil industry (drilling rigs) and processing industry (decreasing in the last 5 years). Implementation of programmes concerning oceans and seas is constrained by a number of factors, including: Financial, Lack of an appropriate institutional framework for addressing and promoting the necessary measures for implementation of the main objectives of the Black Sea Environment Programme: Low cooperation on the developing and undertaking measures to achieve the objectives for the protection and sustainable use of the marine coastal zone of the Black Sea; and Lack of a broad participation in the coordination body to facilitate the development and implementation of measures consistent with the programmes for coastal zones.

Capacity-Building, Education, Training and Awareness-Raising: Programmes to train the decision-makers in the concept and policy design of sustainable coastal management include: the Black Sea University's Training Programmes (annual Summer Courses); and the Public Awareness Programme founded by EC/PHARE for E.I.A., E.A. & I: C.Z.M. (1995). Other trainings were also available in the framework of EC/QUALIPOL/ECOS OUVERTURE Programme, in courses organized by

UNESCO/Intergovernmental Oceanographic Commission (IOC), the International Committee for Scientific Exploration of the Mediterranean Sea (CIESM), and the International Ocean Institute (IOI). In addition, Romania carries out several activities to promote awareness of issues related to sustainable development, oceans and marine environment. Among these are: the National Symposium AQUADEPOL (IX editions), which operates on a permanent basis; the 1998 Scientific Session of the Romanian Marine Research Institute (IRCM) dedicated to the International Year of The Ocean and International Day of The Black Sea; and yearly Symposia organized by the National Institute for Marine Research and Development "Grigore Antipa" (previous IRCM), local authorities and local non-governmental organizations, dedicated also to the International Day of The Black Sea.

Information: Information on sustainable management of fishery resources is available through National Reports regarding the state of the marine living resources. In addition, Reports on the Black Sea environment are included in the annual National Report of the Environmental State in Romania. Figures on off-shore oil production are included in annual reports. Information on the increase of the sea level in relation to coastal erosion and on trends in evolution related to the state of the marine environment quality and marine living resources are also available. Geographic Information System is available at an incipient level. The following world wide web Sites are available for issues related to the Black Sea marine environment which include technical reports, environmental impact assessment, environmental audit, national and international data bases: www.rmri.ro; www.grid.unep.ch/bsein; www.grid.unep.ch:80/bsein/redbook/index.htm. Data were developed through scientific research in oceanography, fishing, pollution monitoring, marine technology and engineering, ecological reconstruction.

Research and Technologies: Issues related to the development, transfer and use of environmentally sound technologies are mainly related to the enforcement of the provisions of the MARPOL. Convention and include the Development of necessary equipment to combat the marine accidental pollutions with hydrocarbons; and improving the cleaning efficiency in the wastewater treatment plants.

Financing: Financing for the marine environment programmes is provided by the national budget, international programmes, external assistance, and to a small extent, private sector partnership.

Cooperation: Romania is Party to the following international agreements: Convention on the Territorial Sea and the Contiguous Zone, Geneva, 1958; Convention on the Continental Shelf, Geneva, 1958; Convention on the High Seas, Geneva, 1958; Convention on fishing in the Black Sea, Varna 1959; The Antarctic Treaty, Washington, 1959; International Convention for the Prevention of Pollution from Ship, London, 1973; and Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, London, 1978; Agreement concerning cooperation in the North-West Atlantic Fisheries, Ottawa, 1978; United Nations Convention on the Law of the Sea, Montego Bay, 1982; Protocol to the Antarctic Treaty on Environmental Protection, Madrid, 1991; Convention on the Protection of the Black Sea Against Pollution, Bucharest, 1992; Agreement Relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea, New York, 1994. Other related agreements, particularly regional and sea-specific agreements to which Romania is a Party include: Center for Fishing in the Black Sea / GEF; Black Sea Regional Committee UNESCO / COI (1996); Black Sea Operational Centre / IOI (1997); and University Foundation of the Black Sea / University Network (1998). Additional bilateral, multilateral and international cooperation in which Romania participates related to sustainable development and use of oceans and coastal areas and include: CoMSBlack (1991-1995); NATO TU -

Black Sea (1994-1997); NATO - Waves (1996-1998); NATO / CCMS (1998-2000); NATO SfP ODBMS (1999-2002); CE / EROS 2000 / 21 (1995-1998); CE / QUALIPOL ECOS - OUVERTURE (1998-2000); Black Sea Mussel Watch Pilot Study for the Black Sea; Technical Assistance to Romania in the field of ICZM, NATO, IAEA/RER/1/2/003; and Black Sea Environment Programme, which was developed on 1993 under the auspices of GEF with EU PHARE and TACIS as major partners.

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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 Waters and Environmental Protection (MWEP) carries out national water strategy and policy in the water resources quantitative and qualitative management field. The specific functions of the Ministry include: strategic planning including the elaboration of water management and development national programmes; preparation of legislation and policy; allocation and management of national budget resources for water management and development; setting the standards as well as the controlling and monitoring of compliance with; preparation of administrative process for regulated use of water resources through the system of license and permits; and international cooperation and cooperation on transboundary water bodies. State Authority “Apele Romane” carries out the implementation of the national water strategy and policy, the quantitative and qualitative water management as well as the operation of the water management structures. This Authority has 11 regional branches organized according to hydrographic river basins of Romania. The Environmental Protection Inspectorates have responsibilities for issuing licenses and permits on the basis of technical reports elaborated by ‘Apele Romane’ as well as for the monitoring of water quality and emissions. In Romania the water management is based on the principle of human solidarity and common interest through the close, all level collaboration and cooperation of the public administration, water users, representatives of the local communities and population, in order to obtain the maximum social benefit. Therefore, the Basin Committee is organized at each river branch of the ‘Apele Romane’, consisting of 15 members.

The general legislation and regulatory framework for water management is the Environmental Protection Law no. 137 of 1995 and the Water Law no 107 of 1996. The Environmental Protection Law has general provisions related to water resources protection and established the regulation of economic and social activities having an environmental impact, respectively the permitting procedure. The Water Law is the fundamental legal act on water management in Romania. This law covers all waters bodies with exemption of mineral and geothermal waters. The Law states that the waters are the integral part of public patrimony. The protection, reevaluation and sustainable development of the water resources are action of general interest. The Law has established the ownership of water, keeping the major water assets as public domain. The provisions of the law have the following objectives: the conservation, development and protection of water resources, as well as ensuring of free water flow; protection against any form of pollution and modification of the characteristic of water resources, of their banks and beds or basins; the restoration of the surface and ground waters quality; the conservation and protection of the aquatic ecosystems; the ensuring of drinking water supply to population and public sanitation; the complex valuation of waters as economic resource and rational and balanced distribution of such resource; prevention and control of floods and of any other dangerous hydro-meteorological phenomena; and the ensuring of water requirements for agriculture, industry, power generation, transport, aquaculture, tourism, recreation as well as human activities. The 1996 Water Law also establishes the river basins concept management of water resources both surface and groundwater. Any water use is subordinated to obtaining a license and permit. Such licensees are also needed for wastewater discharges into water bodies, drainage water from deposit and mine. The law also states that the water supply for population prevails over the use of water for others purposes. The Law provides for establishing protecting zones if needed and River Basin Committee.

The details of 'water resource use regime', standards, norms, etc. according to the Romanian legislation system have to be set up by Governmental Decisions or Ministerial Orders. But a number of such regulations, which are still in force now have been issued before 1996 under the umbrella of the former law. The most important pieces of such secondary laws that have been introduced before 1996 are the following: national standard for drinking water quality/for standard water needs/for surface waters, quality categories and conditions/for irrigation water; Governmental Decision approved the norms NTPA-001 and NTPA-002 on limit values of polluting substances discharged into receiving waters and sewerage systems respectively and that waste water discharges must be licensed and controlled by the competent national authorities; and Governmental Regulation 981/97 on the status of 'Apele Romane' and on water and waste water charges.

The responsibility for drinking water supply, waste water disposal and treatment belongs to the local authorities. The water users are obliged to prepare and apply, if necessary, their own plans for prevention and control of accidental pollution that might occur as the result of their activity.

In Romania there is a unitary economic mechanism for the water management products and services, which consists of: prices; tariff; penalties; and allowances (bonus) – water charges. They aim at a rational and economical management of waters so that the users may follow the quality limits admitted for water discharges for preventing the exhaustion of the water resources and avoiding the damaging of their quality. The prices are the same all over Romania, but differ according to the source of water (inland rivers, Danube River, ground water) and the category of users (industry, households, power plant, agriculture, fisheries). The tariffs are levied on a set of emission charges on water pollution aimed at reducing the pollutant substances in the river flows on the limits set by the law. If the limits are exceeded, fines or penalties are levied. The penalties are levied for the non-compliance with the permits or contracts, both for water intakes and discharges for wastewater. The purpose is to reduce the environmentally harmful impacts of certain activities and to enforce the users to respect the provisions of the permits. The penalties are used as a source of Fund for an Environmental Water management. The income from all water charges is used to cover the cost of operation of 'Apele Romane'. It does not include any financial resources for development of infrastructures 'Apele Romane'. Its consumers pay drinking water, which is supplied, to the population by the municipal water supply systems. The tariffs for water supply and sewerage services differ individually in municipalities. Water Law no 107 of 1996 and Gov. Regulation no.1001 of 1990 deal with pricing policy for all sectors. These policies are however under review and new formulae are being elaborated for the more efficient allocation of water.

The situation undergoes changes. Romania has to transpose the EU legislation covered by the Aquis Communautaire, including the European Union Water Quality Directives and also the UE Water Framework Directive. The directives are on different stage of transposition. The governmental Decision no.964/2000 approved the Action Plan for the protection of waters against pollution caused by the nitrates from agricultural sources; the deadline for full implementation of the Directive 91/976/EEC is foreseen for the end of 2009, beginning of 2010. A key problem is to obtain derogation periods for those directives that call for 'heavy investments.' For the transposition of EU Water Directive according to the Ministerial Order no. 913/15.10.2001 were approved the framework content of Water Management Plan in hydrographic basins and the Action Plan on 2002 for the implementation of the Directive. With regard to a policy for disaster preparedness there are commissions that operate at the national and local level as specified in the Law for Natural Disaster Preparedness no 124 of 1995.

Programmes and Projects: The Joint Action Programme for the Danube River Basin January 2001-December 2005 has identified as key priorities for implementation 10 'hot spots' in municipal waste water treatment, of which the one of Bucharest, 7 'hot spots' in industrial effluents control, 3 'hot spots'

in agricultural pollution, and a number of 'hot spots' related to pollution and potential accidental pollution caused by waste deposit sites and tailing ponds. The Danube Pollution Reduction Programme also contains objectives aiming at protecting the Black Sea and the Danube Delta against pollution by nutrient and hazardous substances.

Other programmes and projects include: PHARE CBC Programme; ISPA Programme: the development of sewerage and water supply systems and assuring the waste water discharging according to UE Directives (Constanta, Craiova, Iasi si Valea Jiului-Danutoni); the rehabilitation of sewerage and water supply networks and the modernization of wastewater treatment plants (Braila, Arad, Cluj, Oradea, Focsani, Timisoara, Targu Mures); Pilot programme on transboundary waters to the 1992 Convention on protection and use of transboundary watercourses and international lakes; Pilot project 'Guidelines on monitoring and assessment of Mures transboundary river (Romania-Hungary); Programmes for the implementation of the EU Directives in the water field (mainly the Water framework Directive); and Black Sea GEF Programme.

Status: There are management tools (financial and administrative) for freshwater resources but they should be improved in the near future.

Until 1989, the water demand in the industrial and agricultural sectors increased continuously. Beginning in 1989, the water demand for both these sectors decreased in parallel with the increase in the quantity of water used by households. The water quality improved slightly owing both to the diminution of agricultural and industrial pollution and to the measures imposed on economic agents by the local EPA. The length of first quality watercourses grew from 35% in 1985 to approximately 59% in 1999 reporting to the monitored rivers sectors length. Nevertheless, there still remained some 9% of the rivers' reference length, which includes degraded waters improper for the development of the aquatic fauna.

Capacity-Building, Education, Training and Awareness-Raising: In Romania there are universities (technical, economic, etc) and also other forms of educational institutions, which are dealing with the issues of water and where the future specialists are educated. In the frame of the universities there are developed post-graduated courses and training programmes in different fields of water. Training programmes are also developed by different institutes and also developed under the international projects/agreements and which create a favourable frame for improving the skills and abilities of the decision-makers and specialists in the concept and policy design of water environmental field. Such programmes are carried out both in Romania and in other countries. At present Romania has developed an intensive activity concerning the improvement capacity for the water management system, which will include the strengthening of the control and regulation activities and modernization of financial and economic tools.

Information: Information on water management and development is collected by the State Water Authority (through its local subsidiaries) and transmitted to the MWEP. It is distributed in real time by a regular system of data transmission and is presented in aggregate form to the decision-makers in the government and upon request, or in case of disasters, to the private sector and the public at large. This information is available in a partially coded form for use in the system of water management. It is not yet available on the Internet.

Research and Technologies: Under the MWEP there are several research national institutes, which are dealing with different scientific and technological aspects concerning water quality and quantitative management and aquatic environment protection and they include: the National Research-Development

Institute for Environmental Protection ICIM – Bucharest; the Institute of Hydrology, Meteorology and Water Management – Bucharest; the National Institute for Marine Research and Development “Grigore Antipa”- Constanta; and the Institute of Research and Development ‘Danube Delta’–Tulcea.

Financing: The estimated costs for compliance with EU Directives on water protection quality is about 5,000 million Euro in the short term and about 15,000 million Euro until 2022.

Cooperation: Romania is Party to the following international agreements on transboundary waters: The UN/ECE Convention on protection and use of transboundary watercourses and international lakes, done at Helsinki 1992; The UN/ECE Protocol on Water and Health to the UN/ECE Convention protection and use of transboundary watercourses and international lakes, done at London 1999; and The Convention on protection and sustainable use of river basin Danube, done at Sofia 1994.

Romania is party to the bilateral agreements on transboundary watercourses management with Yugoslavia (1955), Hungary (1986) and the Ukraine (1997). According to the principles and provisions of the international agreements on transboundary watercourses Romania is also in process of negotiation of an agreement on transboundary waters management with Republic of Moldova and a new agreement with Hungary. A new agreement on transboundary watercourses management will be develop and negotiate with Yugoslavia.

Romania had signed the agreements/memorandum of understanding for development of cooperation in the field of integrated water management with the Netherlands, France (development of institutional capacities) and China.

The agreements on environmental protection between Romania and the State of Israel, Republic of Moldova, Bulgaria, Germany, R. of Turkey are also dealing with the issues of water quality and water management and establish the framework for development of exchange of information, training and projects.

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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 responsibilities for management of toxic chemicals at the central level are with the Ministries of: Waters and Environmental Protection; Industry and Resources; Health; Agriculture, Food and Forests; and Labor and Social Solidarity. At the territorial level there are: inspectorates for environmental protection, sanitary inspectorates, territorial inspectorates for labor protection, and territorial directorates for agriculture. The central level is responsible for establishing the regulation norms and territorial level has responsibility for implementation of the norms.

Programmes and Projects: There is a PHARE RO 9804 .04.01.01 project on increasing administrative and institutional capacity building for coordinating environmental policy in accordance with acquis communautaire. It is in preparatory stage a draft project concerning "Enabling activities to facilitate early action on the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Romania." It is a draft UNIDO proposal and financial support will be provided by GEF.

Status: A national regulatory framework for the management of hazardous wastes and dangerous substances is being formulated in Romania. Concerning the regulation of the dangerous substances and hazardous waste harmonized with EU norms the Romanian authorities adopted: the Law no. 451/2001 that approved the Urgent Ordinance (UG) no. 200/2000 on classification, packaging and Labelling of dangerous substances and the Law no. 426/2001 that approved the UG nr.78/2000 on waste management. A specific law no 85/1995 was promulgated concerning the use of chemicals in the agricultural sector. Special provisions are contained in the Environmental Law no. 137/1995 as amended and the Governmental Decision no. 340/1992 on control of waste and dangerous products as amended.

Capacity-Building, Education, Training and Awareness-Raising: On the base of the UG 200/2000 (see above) a National Agency on Dangerous Chemicals will be set up within the Ministry of Industry and Resources. On the base of GEO 78/2000 on waste management a new Directorate of waste and dangerous chemicals management was set up within the Ministry of Waters and Environmental Protection. There are offices of waste and dangerous substance management in every territorial inspectorate for environmental protection. (There are 41 such territorial inspectorates who belong to the Ministry of Waters and Environmental Protection). A new directorate responsible for public relations was set up within the Ministry of Waters and Environmental Protection. Concerning the awareness there are organized periodically meetings between representatives of administrative sector with representatives of trade unions, business affaire sector.

Information: A new directorate responsible for public relations was set up within the Ministry of Waters and Environmental Protection.

Research and Technologies: There is the National Research-Development Institute for Environmental Protection (ICIM – Bucharest) dealing with the research programme for environmental protection including the management of toxic chemicals.

Financing: A part of research programmes is financed by the budget of the Ministry of Waters and Environmental Protection.

Cooperation: There is cooperation for management of toxic chemicals within the PHARE programme.

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

Decision-Making:

Hazardous Wastes: The management of waste at central level is carried out by the Ministries of: Industry and Resources; Health and Family; Public Works, Transports and Housing; Agriculture, Food and Forests; National Defense; and Public Administration. At the territorial level there are: inspectorates for environmental protection, sanitary inspectorates, territorial and local authorities that have responsibilities in the waste management. The central level is responsible for establishing the regulation norms and territorial level has responsibility for implementation of the norms. On the base of the Law no. 426/2001 that approved the Urgent Ordinance (UG) no. 78/2000 on waste regime the Ministry of Waters and Environmental Protection (MWEP) has been designated as the main competent authority responsible for management of waste (including solid waste and hazardous waste). MWEP is responsible for establishing of the National Action Plan for management of waste and for regulation of waste recovery and disposal operations. The National Action Plan and the regulation of waste recovery and disposal operations cover management of solid waste and hazardous waste as well.

Solid Wastes: See above, under **Hazardous Wastes**.

Radioactive Wastes: The legislative framework for radioactive waste is represented by the Law on Safe Deployment of Nuclear Activities enacted in 1996, amended in 1998 and will be completed by a draft law on the management of radioactive waste and nuclear spent fuel, development and financing of related activities that is under elaboration. In accordance with the provisions of Law 111/1996 on safe deployment of nuclear activities, republished, the National Commission for Nuclear Activities Control (CNCAN) is empowered to issue regulations for the specification in detail of the general requirements for nuclear safety, for protection against ionizing radiation of the professional exposed personnel, or the population, of the environment and of the material goods, the physical protection, the records, preservation, and transport of radioactive materials and of special fissionable materials and the management of the radioactive waste, as well as any other regulations needed for the authorization and control activity in the nuclear field. The radioactive waste produced in Romania, originating from medical or industrial activities, are processed in the country and stored at the Low and Intermediate Radioactive Waste Repository in Baita-Bihor. The radioactive waste produced by Cernavoda NPP is stored in an intermediate on-site repository. In the future, low and intermediate waste originated from Cernavoda NPP will be stored in a final repository near the NPP site. Some geological studies and preliminary analyses for this storage have been performed. The radioactive waste originated from the processing of uranium ores is wet stored in pools located on the site of the processing facilities. The transport of radioactive materials, including radioactive waste is regulated by the national regulation "Republican Norms on Nuclear Safety for the Transport of Radioactive Materials (NRSN-TMR)." This regulation is under revision and will be completed with the relevant European Union requirements.

Programmes and Projects:

Hazardous Wastes: A component concerning the waste management including the hazardous waste was developed in the PHARE Programme ROM 101 and ROM 102. During 2000-2001 a Twinning Programme on waste management has been developed with Germany as partner. There is a proposal to be continued the twinning programme next years.

Solid Wastes: See above, under *Hazardous Wastes*.

Radioactive Wastes: There are proposed the following projects: Long Term Safety Analysis for the Low Level Radioactive Waste Repository Bait Bihor; Refurbishment of Radioactive Waste Treatment Plant at Magurele; Decommissioning of WWR-S research reactor at Magurele; Near surface disposal for NPP radioactive waste at Cernavoda site.

Status:

Hazardous Wastes: A national regulatory framework for the management of wastes included solid and hazardous waste is being formulated in Romania. Concerning the regulation of waste harmonized with EU norms the Romanian authorities adopted the following legal documents: Law no. 137/1995 on environmental protection which contains general provisions concerning management of waste (permitting system, environmental impact assessment procedure, restriction on import of waste); the Law no.426/2001 that approved the Urgent Ordinance (GEO) no.78/2000 on waste regime which is a specific legal act; the following waste are excluded from the scope of the Law no.426/2001: radioactive waste, waste resulting from mining activities, non dangerous waste from agriculture, decommissioned explosives; these waste are covered by other legal documents (*see radioactive waste*) or will be covered by future legal acts; Governmental decision no.155/1999 on waste inventory and evidence; Governmental decision no.173/2000 on PCB/PCT (hazardous waste); Governmental Decision no. 662/2001 on used oil (hazardous waste); and Governmental Decision (will be published) on used batteries (hazardous waste). There are in advance stage of preparation the following Governmental Decisions drafts on management of hazardous and solid wastes: landfills; waste incineration; import export and transit of the waste; and management of packaging and waste packaging.

Solid Wastes: See above, under *Hazardous Wastes* and under **Status in Chapter 8** of this Profile.

Radioactive Wastes: Radioactive waste facilities include: Cernavoda NPP, in which there is one interim storage facility of NPP operational solid radioactive waste. The spent ion exchange resins are stored on-site in concrete tanks, and organic liquid wastes are stored in 220 liters stainless steel drums. The RW management strategy foresees the construction, starting not earlier than 2003, of a disposal facility plus associated treatment and conditioning plant near the Cernavoda NPP site to cater for operational LILW-SL. Institute for Physics and Nuclear Engineering – Horia Hulubei, Bucharest, Magurele: The radioactive waste treatment facility Bucharest-Magurele caters for the majority of the country's institutional radioactive wastes as well as radioactive wastes from the research reactor. The waste is cemented in 200 liters drums and moved to the intermediate storage on-site, before transportation to the national radioactive waste repository Baita Bihor for disposal. The Radioactive Waste Treatment Station Pitesti caters for the radioactive waste from the nuclear fuel plant, from the research reactor TRIGA and from the Post Irradiation Examination Laboratory. The short level low leved waste is cemented and sent also to the national radioactive waste repository Baita Bihor for disposal.

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

Hazardous Wastes: On the base of Law no. 426/2001 that approved the Urgent Ordinance no.78/2000 on waste management a new Directorate of waste and dangerous chemicals management was set up within the Ministry of Waters and Environmental Protection. There are offices of waste and dangerous substance management in every territorial inspectorate for environmental protection (there are 41 such territorial inspectorates who belong to the Ministry of Waters and Environmental Protection). A new directorate responsible for public relations was set up within the Ministry of Waters and Environmental Protection. Concerning the awareness there are organized periodically meetings between representatives of administrative sector with representatives of trade unions, business affaire sector.

Solid Wastes: See above, under **Hazardous Wastes**.

Radioactive Wastes: The National Commission for Nuclear Activities Control structure includes a specific section “Section of radiation protection and radioactive waste management” that covers all specific activities in this area. Education and training are performed in the framework of technical assistance projects developed by International Atomic Energy Agency.

Information:

Hazardous Wastes: A new directorate responsible for public relations was set up within the Ministry of Waters and Environmental Protection

Solid Wastes: See above, under **Hazardous Wastes**.

Radioactive Wastes: Issue is not applicable.

Research and Technologies:

Hazardous Wastes: There is the National Research-Development Institute for Environment Protection (ICIM –Bucharest) dealing with the research programme for environmental protection including the management of waste.

Solid Wastes: See above, under *Hazardous Wastes*.

Radioactive Wastes: In this field, in Romania there are the following research and technologies: technologies and equipment for the premier confinement barriers for long life radioactive waste; Behavior of the cement matrix of radioactive waste in real and simulation conditions of disposal; Assessment of the impact on the public and environment in the Baita Bihor repository area; Technology for conditioning of the organic oils waste containing tritium and carbon; Technology for conditioning of the organic waste containing tritium and carbon resulting from decontamination; Technologies for conditioning of the spent resins containing carbon from Cernavoda NPP; the characterization of the repository site for near surface disposal of Cernavoda NPP.

Financing:

Hazardous Wastes: In accordance with existing waste legal framework the “polluter pay principle” is applied in the management of waste. The Government could decide to provide financial resources from budget for waste management facilities. There are in preparation financial instruments for waste management. A part of research programmes including the programmes on waste are financed by the budget of the Ministry of Water and Environmental Protection.

Solid Wastes: See above, under **Hazardous Wastes**.

Radioactive Wastes: The Law on Safe Deployment of Nuclear Activities established that each radioactive waste producer must demonstrate proper and sufficient financial arrangements as a pre-requisite to receiving a license to operate. The Law stipulates that other specific laws will be developed on this topic in the future. In this context, a new law on the management of radioactive waste and nuclear spent fuel, development and financing of related activities has been drafted by the Ministry of Education and Research– The National Agency for Atomic Energy Nuclear together with National Commission for Nuclear Activities Control (CNCAN). This draft law is going to enter in parliamentary procedure for advising. The draft law is based on the principle that all users of nuclear technologies producing radioactive waste must contribute to the fund. The Fund is also financed from the state budget (annual quotas), contributions (such as, of the facilities that develop nuclear activities on manufacture, import export, trade) and from other financial sources. This draft legislative project proposes the establishment, until the end of 2002, of an entity responsible with the management and administration of radioactive waste and of the nuclear spent fuel, as well as with the setting-up of the specific strategies and with the coordination of the actions in the field.

Cooperation:

Hazardous wastes: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was ratified in 1991.

Solid Wastes: No information available.

Radioactive wastes: Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, ratified in 1999, in force from 18 June 2001.

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CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-Making: Total, equal and positive integration of women in all the development-related activities is recognized and promoted by the international community by means of declarations, conventions and many action plans. **Status:** In Romania, women constitute an important human potential, owing to their proportion in the active population, their strong representation in social professions, and their degree of education. The degree of schooling for women between 1990 and 1997 was almost 95.4%, with great differences between the rural and the urban environment. The net rate of their school attendance shows significant differences between rural (40,4%) and urban areas (78,6%) between different social classes and ethnic groups. Women's participation in the economic life, reflected in their proportion in the active population and in certain professions, as well as their professional status, shows that, although at first sight equal to men's, there are inequalities regarding women's access to top level jobs, including politics. The unemployment rate for women has always been higher than that for men, especially affecting women who are 15-24 years of age. Statistics indicate cancer, post-natal mortality and high abortion rates as the main problems affecting the female population in Romania. On the average, a woman in Romania has 3-4 abortions during her lifetime, while in Western Europe there is less than 1 abortion. Although modern ways of contraception are legal today, most women still abort or use traditional methods of fertility regulation and contraception. The main problems with which women in Romania are confronted are: psycho – social problems in a society based on patriarchal values; incomplete legislation for their development in the family and society; and total or virtual lack of institutions and services adapted to the women's needs. Women's organizations have had a tradition in Romania ever since the last century, when they had a charitable or cultural character. In the communist period they had a mass character and were preponderantly politically oriented. Since 1990 women have been actively involved in NGK's, professional associations, unions and organizations for the promotion of their specific problems

Children and Youth: Status: Youth's participation in the development and implementation of sustainable development policies is implicit, because the direction in which society develops exerts a direct influence on their present and future lives. They represent approx. 30% of the population, their intellectual contribution and their ability of enthusiastically supporting cause opens up a special perspective that must be considered. The proportion of young people in secondary education differs strongly between urban and rural environments and among administrative departments or countries. The number of students in undergraduate university education is lower than Eastern European countries. The proportion of young people in the total number of unemployed is 50.96%, with small regional differences. The main problems affecting this social group are: lack of housing / difficulties in obtaining it; lack of professional training; lack of participation in the public and political life; drug abuse and dependence; and lack of organizations in charge of youth problems. Conservation and protection of natural resources and the environment is primarily done in the interest of children. They are most vulnerable to the effects of social environment degradation, both in developed and developing countries. They also represent the most receptive social segment when it comes to an ecological way of thinking. The specific interests of children have to be taken into consideration in the processes and actions related to the environment and development, in order to ensure their sustainability. Special attention has to be paid to disadvantaged children: those from polluted, isolated areas, street children and the victims of abuse. In order to solve this problem, the appropriate legal framework has to be created and implemented by government structures and NGK's working with children.

Non-Governmental Organizations: Decision-Making: Non-governmental organizations (NGOs) play a key role in the shaping and generation of community involvement in the democratic dialogue. Their credibility lies in their responsibilities and constructive participation in the development of the society. The activity of the NGOs does not have to be perceived as an alternative or a substitute for the local administration units, but they usually offer a complementary course of action in order to solve the problems of the public by encouraging the governmental sector to adopt solutions. They also cooperate with administrative institutions to educate and sensitize the public and the administration. The partnership between public administration and NGOs is one of the forms through which both sides decide to reach a goal. It can be formal or informal and can assume different aspects: NGOs taking on an advisory role for the administration subsidies for NGOs activities by the administration for public benefit, contracting services offered to the administration by NGOs. **Status:** The institutionalized and NGOs must be acknowledged as partners for the implementation of sustainable development strategies and policies. Although some NGOs, created before World War II or even at the beginning of the century, succeeded in surveying the totalitarian period, the Romanian non-governmental movement experienced an explosive rebirth after 1990. The creation of new non-governmental organisms is possible based on Governmental Ordinance no.26/2000, regarding creation, organization and functioning of associations and foundations. Currently, the number of Romanian NGOs is not exactly known, but according to the recent estimates (NGOs catalogue in Romania 1997) it apparently reaches 11,000. According to the same source, their distribution according to the residential environment is Bucharest 23% (735), urban areas (department capitals) 58% urban areas (not including the department capitals) 12% and the rural areas 7%. With regard to the activities connected to environment protection, the NGO Catalogue published by REC in 1997 lists 21 organizations active in the field of training and environmental education (88%), in environment protection and nature conservation, pollution control (65%), and 52% in raising the society's awareness to the dangers of pollution. Regarding membership, more than a half of these organizations (65%) have up to 50 members, and only a few have a membership over 3,000. Their funding is predominantly external. Internal funding comes mainly from the local offices of the REC (88%), the Soros Foundation (23%), the Ecumenical Association (15%) and to a lesser extent, USAID, the Know How Fund and the MilieuKontakt Oost-Europa. In order to exercise the representative functions of the citizens in their relation with the administration, the NGOs have to act as a society indicator and they must be extremely mobile, in order to re-direct their actions according to society's needs. Thus, the NGOs play an important part of both the identification of community problems and the organization of measures to correct them, by means of catalytic resources that the administration does not provide.

Local Authorities: Decision-Making: Local authorities (LA) support the implementation of sustainable development principles. Local Agenda 21 includes the elaboration of the Local Strategy, Local Action Plan and Priority Projects and is implementing by National Centre for Sustainable Development in cooperation and with support from United Kingdom (DFID) and Canada (CIDA). Coordination of the LA 21 initiative is jointly responsibility of the National Steering Committee and Local Steering Committees, with overall responsibility given to the National Steering Committee. These bodies interact with each other on regular basis. The Local Steering Committee is made up of local officials, representative NGOs and local stakeholders. They are in charge of the coordination, finances and the supervision of their local project. They are also appointed and supervise experts for the Working Groups and for the implementation the envisaged activities at the local level. Periodically the Local Steering Committee will upgrade LA21 in function of the Results coming from Local Action Plan field implementation. The National Steering Committee represent the stakeholders at the national level and support the local body in

its work, through training, workshops seminars and information dissemination. In particular the National Steering Committee explores links with other international bodies and experts in the field, to support the project. **Programmes and Projects:** The nine pilot city halls (Ploiesti, Giurgiu, Ramnicu Valcea, Galati, Targu Mures, Iasi, Baia Mare, Oradea and Miercurea Ciuc) are involved at local level in the implementation of Agenda 21. The project, which was started in March 2000 within the UNDP Project ROM/98/012, will end in February 2003.

Workers and Trade Unions: **Decision-Making:** A partnership mechanism was created amongst the Government, the private sector, and the trade unions. Meetings have taken place between the Environment Ministry and the trade unions on issues regarding environmental protection, sustainable development, etc. **Status:** The role of trade unions is important in Romania and there is full participation of workers in implementation and evaluation of Agenda 21. The trade unions have been actively involved in finding optimal solutions for controlling pollution and improving working conditions, especially in areas considered “hot spots” from an environmental point of view.

Business and Industry: **Status:** The deterioration of the industrial and economic activity, a situation that was first seen in the 1980s, then the accelerated decline and chronic macroeconomic imbalance created between 1990 and 1998, demonstrated that in the general context of the difficulties generated by the transition process, the socio-economic evolution of Romania was also adversely affected by the absence of an integrated global strategy capable to define a pragmatic approach to the medium and long – term options and goals to be realized in the development of the main industrial branches and to evaluate and optimize the impact upon the human development.

In this context, the strategy for the sustainable development of the industrial sector should seek an increase in competitiveness, and based on this, it should also seek stable and sustained economic growth, in conjunction with the environmental protection. This goal is not simply a desideratum, but a necessity. The shrinkage of the industrial production has been determined mainly by the slow adaptation to the new demand and structure of the markets after 1989. Other factors were: the increasing loss of capital and the dull economic environment, the slow pace of privatization and restructuring, the incoherent and unstable legal framework which discouraged foreign investment, the insufficient support offered by the banking system to the reform process.

Scientific and Technological Community: **Decision-Making:** There is some effort toward improving exchange of knowledge and concerns between the science and technology community and the general public. According to the provisions of Environmental law no.137 of 1995, all activities with negative impacts on the environment must be authorized. Environmental permits can only be given based on an Environmental Impact Assessment (EIA). Existing economic agents have to apply the compliance schedule in order to comply with domestic environmental legislation. **Programmes and Projects:** There is a National Priority Programme of Research in Ecology and Environmental Protection and Waters Management. Under this programme important themes have been promoted with international participation, including problems connected to development and environmental reconstruction. In all these actions, the scientific community has an important role.

Farmers: **Decision-Making:** The Forestry Agricultural Science Academy is directly involved in promoting the sustainable use of agricultural procedures at the farmer’s level. The Ministry of Waters and Environmental Protection and the Ministry of Agriculture, Food and Forest are involved in the implementation of the appropriate practices, by adequate policies and regulations. When drawing up the

stages for sustainable development of Romania's agricultural sector, the following primary objectives must be taken into consideration and should be reflected in policies, strategy programmes and action plans at local and national level: on short term, small farms (currently producing at the subsistence level) should be stimulated by fiscal and other policies so that they may start producing for the domestic and foreign markets; on medium term, making small and family farms profitable and capable of producing for the domestic and foreign market on a large scale; and on long term, a growing preponderance of small family farms and managerial farms using modern techniques and whose products can compete successfully on the foreign markets and contribute significantly to GDP. Status: In order to make sure that farming does not harm the environment, a set of agricultural – environmental indicators must be introduced, so as to identify the types of crops and technologies that may endanger the environment and at the same time, to determine whether those risks are socially and environmentally acceptable. Under the current circumstances, the development of the agricultural sector, of rural areas should become the object of investment programmes; these will guarantee rapid profits for millions of enterprises and investors.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: The Ministry of Public Finance and the Ministry of Waters and Environmental Protection work at analyzing the existing environment-related instruments and adjusting them to market conditions and to true cost to ensure sustainable resource use. The 'polluter-pays principle' should be adjusted to include all costs of remedying both permitted and illegal pollution, including the clean up of specific damage.

Programmes and Projects: Relevant Programmes and Projects include: PHARE National Project for institutional building and twining—collaboration with the European Union (EU); PHARE—CBC/Cross border projects—EU; PHARE Regional River Management Project and Delta ECO Activities Project—EU; ISPA, wastewater treatment, water supply—EU; waste management projects; EU—SAPARD—Special EU accession programme; EU—LIFE, Environment and nature projects; EU-Stability Pact-Environment and nature projects; USAID ensure financial support for the project regarding environmental policies (EPIQ). The main components of the project are: environment compliance strategy; environment-financing strategy; self-financing of Environment Protection Inspectorates, Environmental Fund; and Environment Economic Instruments. All components are underway; World Bank by GEF—Projects on biodiversity; Denmark—Technical assistance investments for: wastewater treatment; water supply, air quality and waste management; Netherlands—Cleaner technology project; Switzerland—Municipal heating systems; Norway – Heating system rehabilitation; and the United States—Technical assistance and cleaner technology issues.

Status: *Air protection:* There are at present no charges or fees for air emissions. The main air polluter in Romania is the energy production sector. Nor are there any tax benefits for energy-related investments impacting on air emissions. Environmental Protection Inspectorates impose fines and penalties for non-compliance with air emission limits, on a case by case basis. The fines are relatively low, ranging from US\$ 10 to 40 per incident, and so do not act as a deterrent. A tax differentiation for leaded/unleaded petrol was introduced in 1994 in order to encourage the use of unleaded petrol. At present, unleaded petrol is only slightly cheaper -- US\$ 0.04 per litre -- than leaded petrol of the same octane grade. Individuals, State and private companies pay a special tax on all private vehicles and on lorries, tractors, agricultural machinery and water transport vehicles. The tax depends on the engine capacity and varies between US\$ 2 and 7 per year. The tax was introduced to increase the revenue of local governments for building and maintaining public roads. Since the beginning of 1998, import duties on cars equipped with catalytic converters have been lower than on cars without catalyses. Customs taxes and duties on imported cars amount to about 20% of the retail price. Imports of cars over eight years old are not allowed. There are no environment-related taxes on air travel. However, Urgent Ordinance No. 29/1997 empowers the Ministry of Public Works, Transport and Housing to issue special regulations for environmental protection.

Water supply: The end-user charge for the water supply is made up of: a water extraction charge levied on the quantity of raw water extracted from rivers, including water from the Danube, lakes and groundwater; a water discharge fee for waste water discharged into water bodies; and a water consumption charge to cover the operating costs of the water supply companies. The water extraction charge is uniform throughout the country, but varies according to the source and the use of the water. Box 1 gives an indication of price levels for water abstraction. The water abstraction charges cover all raw water abstracted and subsequently resold to the local water supply distributors.

<p align="center">Box 1 Indicative prices for water abstraction in 2000</p> <p><i>Water abstracted from inland rivers:</i> for households, industry, and livestock: US\$ 5/1000 m³; for irrigation and fishery: US\$ 0.5/1000 m³; for power generation: US\$ 0.04/1000 m³</p> <p><i>Water abstracted from the Danube:</i> for households, industry, livestock and power generation: US\$ 0.60/1000 m³; for irrigation and fishery: US\$ 0.5/1000 m³</p> <p><i>Water abstracted from underground:</i> For households: US\$ 2.5/1000 m³; for industry: US\$ 5.6/1000 m³; for the irrigation and fishery: US\$ 2.5/1000 m³; for livestock: US\$ 3.3/1000 m³</p>
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The water discharge fee comprises two components: a tariff for within-limits discharge concentrations and a penalty for excessive discharge concentrations. The resulting end-user prices vary among the water supply companies depending on their raw water cost, discharge fees, the operating technology of the water supply facilities, the autonomy of the individual water companies and the need for special flood protection measures.

The raw-water prices that Apele Romane charges to the local supply companies is controlled by Office of Competitor; the end-user cost including both raw price and local cost is decided and approved by the Municipality, but with variations depending on how the local company is organized. All costs for extraction and delivery to local facilities, including flood protection for Apele Romane's delivery pipes, is borne by Apele Romane. From the point where the raw water is received, the local supply company is financially and operationally responsible for its own facility operation, management, maintenance, state of technology, new investments, and flood prevention measures.

At the end of 1997, some 80% of consumers paid between US\$ 0.60/m³ and US\$ 0.75/m³ of drinking water. Of the other 20%, some paid as little as US\$ 0.15/m³, others as much as US\$ 4/m³. In the average family budget, these water-supply expenses were said to represent 2.5-3% of household income. At present, some 50% of Romania's water consumption is metered; the rest is based on estimated consumption.

Sewage charges: The variation in sewage charges is very wide due to the variety of conditions existing throughout Romania. The level of the charges depends primarily on whether the locality has a waste-treatment plant or not, existing technology and operating set up, the discharge conditions and contents and the state of the sewage network. Charges for domestic wastewater per cubic metre vary from US\$ 0.20/m³ to 0.35/m³ depending on the location. In extreme cases the charge has been US\$ 1.25 per m³. According to Government Decision No. 47/2000 the charge comprises two components: a tariff for within-limits discharge concentrations and a penalty (over and above the tariff) for excessive discharge concentrations. At present there are twenty-seven parameters divided into five main categories: general chemical parameters, specific chemical parameters, toxic and very toxic chemical parameters, bacteriological parameters and physical parameters.

Other instruments related to water quality: There is a water pollution non-compliance fee and there are also financial mechanisms for the completion, modernization and rehabilitation of water quality improvements (water supply, wastewater treatment plant, sewage systems and networks, etc.) These mechanisms include State subsidies, government-guaranteed loans and exemption from import duties on environment technology.

Waste collection and disposal

User charges on municipal waste: Three charging systems are applied: for households: a fee per household, based on family size; for industry and other waste producers: a fee per ton of waste generated; and for disposal at public disposal sites and landfills: a charge per ton dumped. Household waste is charged as a fee per person per month and generally varies between US\$ 0.30 and 0.70, depending on the municipality. Disposal charges for industry generally range between US\$ 8.5 and US\$ 12.5 per ton depending on the site. Information on industrial waste charges and depositing on industries own sites were not available. It is not mandatory for households to participate in the waste collection system. In

many smaller towns the waste collection and transport system has completely broken down since 1989. For more details, see Chapter 8 of this Profile.

Charges on hazardous waste: There are no special charges for hazardous waste; the charge for 'normal' waste is applied. Usually the producers, i.e. industry, possess and manage their own landfills. The environmental situation of company-managed landfills and deposits is not known. Public landfills do not have special facilities for sorting and depositing hazardous waste. Deposit refunds/Recycling: Until 1989, recycling was extensive, with approximately 11,000 recycling centres. Today only a few hundred remain all operated by specific industries.

Waste non-compliance fees: There are at present no non-compliance fees or fines neither on hazardous or industrial waste, nor on illegal waste imports.

Natural resources: There are various fees for the use and exploitation of natural resources: for example, for land use, tree cutting, mining, oil exploitation, aqua and marine areas, and hunting. It is understood that the types and levels of these fees are negotiated case by case, depending on the actual sites, the extent and purpose of use, the extent of remedial obligations, etc. The fees involved are, therefore, not considered general 'economic instruments', but rather general fiscal income or rent. Details of the respective revenue from these individual activities are not available or reasonably verifiable. For several years the Ministry planned to establish a formal 'environmental protection fund', which would have a broader revenue base. Investment activities would also be extended to cover environmental remediation and other environmental protection activities, environmental training and education. A Law on Environmental Fund was passed in 2000 (no.73/2000 modified with Governmental Ordinance no.93/2001), but no statutes or operating procedures have yet been established for the fund.

Capacity-Building, Education, Training and Awareness-Raising: Based on Law no.73/2000 on Environmental Fund, modified with Governmental Ordinance no.93/2001 will be set up National Administration of Environmental Found.

Information: Relevant information is available at the Ministry of Waters and Environment Protection.

Research and Technologies: A series of new instruments is being considered or planned by the Ministry of Waters and Environmental Protection, although not yet adopted. The instruments include a tax on air emission charges on permitted emissions, flood protection fees and dam protection and enhancement fees, fertilizer and pesticide product charges, and product charges for different post-consumption waste products (e.g. packing materials, tires, batteries, newspapers). The Ministry is also exploring the introduction of emission trading and the trading of effluent discharge permits (which would enable industry and municipal sewage treatment plants to trade BOD, nitrogen and phosphate discharges). Also under consideration are an increase in effluent tariffs based on quantities and distinguishing among various types of suspended and discharged substances, the improvement of penalty systems to further discourage non-compliance, punitive measures for willful violators, and the re-introduction of deposit-refund systems.

Cooperation: With European Union by PHARE; National; PHARE CBC; PHARE Regional; by ISPA; SAPARD; LIFE; Stability Pact; With World Bank by GEF; With United States Agency for International Development (USAID) for the project regarding environmental policies (EPIQ); and With: Japan, Denmark, Netherlands, Switzerland and Norway.

CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: STI policy: coordination of R&D&I activities: in central public administration: the Ministry of Education and Research; and the Romanian Academy.

Programmes and Projects: Forms of public funding for RTDI: *The National Plan for RTD and Innovation* (1999-2003): Multi-annual programmes oriented towards: the generation of economic effects on short/ medium term, as direct response to specific economic demand for RTDI; Support for the international integration of the Romanian S&T system. The National Plan for RTD include the national Programme for environment, energy and resources MENER with the next objectives: The evaluation of the environment quality and the regeneration of the natural capital of Romania: water, air, ground, ecological systems and biodiversities, agrosystems; methods, technologies, instruments, systems and equipment's for the environment protection and natural resources; identification of the fundamental processes and variability of the climatic system and environment at the regional level and global level including pollution's areas; Methods, technologies, instruments and systems of prediction and monitoring of the risk factors natural and anthropic in risk situations and disasters; Evaluation of the producing mechanisms, impact and actions of natural disasters; and management of the risks.

The National Programme HORIZON 2000 (1996): 20 field-oriented research directions; RTD objectives with medium/long term impact (especially in fields of general interest for society: health, environment, basic sciences); around 80 "macro" objectives for the 20 thematic fields; Participation: objective-based; and Partnership: consortia of RTD organizations.

Programmes of grants for scientific research (1996): advanced research projects, freely initiated by the scientific community (no prior setting of domains/ objectives); stimulation of scientific excellence and building of scientific career; 5 categories of projects; and Participation: project-based/ individual (researchers, teams).

Capacity Building, Education, Training and Awareness-Raising: The Programme for the environment and the institutes in the field – MENER.

Research and technology: The research institutes in field of environment.

Financing: The Ministry of Education and Research provides funding through contracts awarded by competition in the framework of the National Plan.

Cooperation: International cooperation on bases of bilateral agreements and the participation in European Framework Programmes, EUREKA, NATO projects and COST Actions.

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: The Ministry of Education and Research ensure the national education programme, which contains a clear definition of environmental education requirements. The Ministry of Waters and Environmental Protection (MWEP) make an informal public education. A new Public Relations Department was established within MWEP. Also, Local Environmental Protection Inspectorates play an important role in promoting education and public awareness. Is necessary to establish an agreement between the Ministry of Education and the Ministry of Waters and Environmental Protection on environmental education, followed by joint action and evaluation, would be needed the training of trainers in environmental matters is strengthened. Also, local authorities, by its directorate for environment protection, can have actions for promoting environmental education.

Access to information is a constitutional right in Romania (art. 31.1 of the 1991 Constitution). The Law on Environmental Protection (No.137/1995), which establishes the general framework for policy, provides a specific right of access to information on the quality of the environment. The Law on Environmental Protection stipulates in article 5 (paragraph C) the right of the public and NGOs to be consulted in decision-making concerning the development of environmental policies, legislation and regulations and the issuing of environmental agreements and permits (territorial and urban planning included). Basic information has to be provided before consultation. The right to initiative (for direct democracy referendums) does exist with no specification as to the topics concerned, but it has never been used.

Romania ratified the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environment Matters, signed at Aarhus (Denmark) in 1998, through Law No. 86 of 22 May 2000. The definition of environmental information is very large and aims at offering every individual the means to know whether his or her rights to a healthy environment are being respected. The Convention establishes concrete modalities for public participation and conditions for public debate in the environmental decision-making process. This includes planning and programming policy and strategy and special projects. The Integrated Monitoring System in the MWEP is considered a reinforcement of the institutional framework to ensure implementation of the Aarhus Convention.

Programmes and Projects: A project, PHARE 98, “Strengthen the institutional and administrative capacity if the Ministry to manage the Acquis Communautaire,” aims to provide the institutional development necessary for transposing and implementing legislation. Particularly, its technical assistance and training include: publications such as a monthly newsletter, a quarterly bulletin, media kits etc.; and training of the members of Ministry and Environmental Protection Inspectorates on techniques of working with NGOs, the press and other media.

ICIM finalized and handed to the MWEP administration 2 documents with PHARE support: a practical handbook for public participation, detailing the methodologies and ways of managing a public debate, and a proposal for a complete reorganization of the Ministry, gives information and participation a more important place. In 2000 the PHARE programme continues to develop public awareness strategies, while the previous recommendations and tools were neither implemented nor disseminated among social sectors. Other important strategies have recently been issued, for instance the “Public Awareness Strategy” of June 2000 under the leadership of the MWEP and the Danube Delta Biosphere Authority in Tulcea. An implementing action plan was also drawn up.

EU financed, by PHARE, “Educational Issues in Environmental Protection in Ramnicu Valcea” Project was sent to European Union by Environmental Protection, Foreign Affairs Directorate from Ramnicu Valcea City Hall. Its final goal is improving the city sanitary and esthetic conditions, protecting population health condition and environment, and implicitly, bringing the local administration in line with the European standards. In the opinion of Ramnicu Valcea municipality, to educate the population in environmental protection, the followings should be undertaken: campaigns for citizens; information dissemination; and ecological education in schools and kindergartens.

Leonardo da Vinci Programme aims to: acquire new abilities/skills; secure a European dimension for the initial and continuing education activities, as an essential component of the pre-accession activities; converge and recognize qualifications by relating them to common standards and reference frames; and setting up of long-lasting partnership with institutions, agencies and organizations from EU member states.

Status: The MWEP has published a report on the state of the environment (SoE) every year since 1996. The national report is compiled by National Research-Development Institute for Environmental Protection, ICIM, based on the data provided by the research institutes, National Company “Apele Romane,” Romsilva, National Commission for Nuclear Activity Control, Romanian Administration for Danube Delta Reserve and EPIs. Each EPI produces a yearly SoE report for its county, based on specific local data. The local SoE report is available for inspection on demand and a limited number of printed copies are available free of charge. A short abstract of the main figures in the SoE report, similar to those in the press release, is available on the Ministry’s web site (<http://www.mappm.ro>). The MWEP publishes a magazine dedicated to environmental issue. ICIM is printing an environmental magazine with large dissemination, even abroad. There are some other environmental bulletins as other radio and TV programmes dedicated to the environmental issues.

Besides institutional information, most NGOs are concerned with information to the public. In “Atitudini” (Attitudes) magazine, financed by PHARE, they publish news on environmental actions and policies. In the magazine “Perspective,” the Romanian Environmental Journalists Association (ARZM) deals with environmental issues, explaining environmental phenomena and policies. Many specialised NGOs publish booklets and magazines, such as ROMAQUA issued by ARA, the professional water association, for technical and scientific information on water management or “Marea Noastra” (Our Sea), a magazine published by the Liga Navala Româna (the “Professional of the Sea” Organization), for information on marine ecology. The Resources and Information Centre for NGOs in Constanta (CIER) produces general ecology and thematic information, which is disseminated to the public free of charge. In natural protected areas such as the Danube Delta under the Biosphere Reserve Authority (Man and Biosphere (MAB) Reserve of UNESCO) information brochures and other good quality educational publications intended for visitors are produced, but sparsely disseminated.

Environment is taught at primary school from the first to the fourth levels in the “man and society” subject, and afterwards in the “natural science” curriculum. At secondary school, ecological education is taught from an interdisciplinary perspective (physics, chemistry, biology, geography) and independently in the biology curriculum. The Civic Culture curriculum in general and professional teaching contains references to ecological awareness. In the technical high schools (agriculture, forests, sport) ecological aspects are present in the specialised courses. An optional “Ecology” class that deals with the scientific notions of ecology is proposed for either the general or the technical curricula. Summer activities are organized on environmental themes, as well as participation in national (e.g. CO₂ Day, National Competition for Environmental Projects held in Jasi-Muncelul Camp for the first time in 1999 on the initiative of the Ministry of Education) or international competitions (e.g. International Olympiad in Turkey, where Romanian schools participated 5 times out of 6, winning many prizes). Children’s Clubs are publishing many local reviews, such as Eco, Ecological Universe or Nature’s Friends. Cooperation between schools and NGOs on ecological projects is frequent. For instance, in Constanta, NGOs together with the University of Ovidiu and some members of the Antipa Institute organize educational sessions with classes on marine ecology. The Mare Nostrum NGO produces a weekly one-hour programme devoted to the environment on the local TV channel. With the help of the Harbour Administration, they have also organized seashore clean up operation in the Tomis Harbour. 21 university curricula all over the country have environmental programmes or are entirely specialised in this topic. This may change with the current reform of the educational system, whereby responsibilities for education are decentralised, and university teaching is being privatised.

The role of various private foundations and NGOs in environmental education is very strong. The role of teachers’ and pupils’ organizations and sometimes of the local authorities in educational initiatives and achievements are noticeable too. According to the Environmental Strategy, the MWEP is supporting the educational component in

several domestic and international programmes. In the same light under the guidance of the Ministry, EPI's is organized and conducted concrete environmental actions.

Information: Ministry of Education and Research, Ministry of Waters and Environment Protection, Environmental Protection Inspectorates, National Research-Development Institute for Environmental Protection ICIM Bucharest.

Financing: the national budget and EU-PHARE, Leonardo da Vinci Programme and other programmes fund environmental education.

Cooperation: With European Union especially by pre-accession instrument PHARE; and Romania ratified the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environment Matters, signed at Aarhus (Denmark) in 1998, through Law No. 86 of 22 May 2000.

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

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

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

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

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Decision-Making: As regards the environment preservation and protection, Romania has integrated into the relevant international community concerns. Romania is a party to almost all the environmental conventions currently in force at global and regional levels, supporting the further development of multilateral environmental agreements and participates in all major processes and international institutions and putting considerable effort into the full implementation of the provisions deriving from the international agreements to which it is a party. After ratification, provisions of conventions become national laws and are obligatory for all sectors.

The invitation to Romania to start negotiations for accession to the European Union opened a new perspective for enhancing the harmonisation in environmental protection. In 1999, this process speeded up, regarding the integration of environmental policies within other sectoral policies and the need to strengthen the national and local institutional capacity to implement and enforce the provisions of the newly transposed legislation.

The Environmental Protection Strategy was updated in 2000 and contains short-, medium- and long-term objectives for international cooperation in environment protection, which can be summarised as follows: Romania aims to strengthen its institutional capacity through participation in environmental agreements and bilateral, regional and multilateral cooperation; The legislative framework will be strengthened through harmonising national legislation with EU legislation, with the objective of becoming a member of the European Union; and International funding and technical assistance will be attracted to accelerate the implementation of environmental protection policies.

Programmes and Projects: *European Union:* The pre-accession programme (PHARE). The MWEP implemented projects co-funded by PHARE-Environment, PHARE-Cross-Border Cooperation and PHARE Multi-Country Programme. The pre-accession programme, the Instrument for Structural Policies for Pre-Accession (ISPA) aims at developing transport and environmental protection infrastructure (waste, water and air infrastructure) to support implementation of the relevant EU directives requiring large investments. The EU Special Accession Programme for Agriculture and Rural Development (SAPARD) aims to help solve problems of structural adjustment in the agricultural sector and implement the EU body of law concerning the Common Agricultural Policies until 2006.

Romania is participating in LIFE-Nature and LIFE-Environment programmes in the third phase (2000-2004). In cooperation with the MWEP, the World Bank has been implementing three important projects with GEF grants for the conservation of nature and of biological diversity and granted project on agricultural pollution control. Global Environment Facility has several projects, mainly in the focal areas of biodiversity and international waters.

Romania participates in the Stability Pact for South Eastern Europe, which, under its Working Table II (economic reconstruction, development and cooperation), also addresses the subject of environmental protection. A project portfolio was submitted by the MWEP; so far, no project has been approved or implemented. ECOLINKS, an initiative funded by USAID, is offering small grants to private companies and municipalities. Through its country office in Bucharest, REC is currently managing and implementing the ECOLINKS programme. The programme aims to establish partnerships with businesses or municipalities in the United States. An amount of US\$ 25 million has been made available for seven central and east European countries, to be disbursed over five years. Several grants have already been given to Romanian beneficiaries.

Ministry of Waters and Environment Protection collaborates closely with USAID. USAID ensure financial support for the project regarding environmental policies (EPIQ). The main components of the project are environment compliance strategy, environment-financing strategy, self-financing of

Environment Protection Inspectorates, Environmental Fund, and Environment Economic Instruments. All components are underway.

UNDP is an active partner in environmental protection with capacity building project for GHG emission reduction through energy-efficiency improvement.

Status: *World-Wide Arrangements:*

Year	Agreement	Signed or Ratified	In Force at International Level
1949	(Geneva) Convention on Road Traffic	R	Y
1957	(Brussels) International Convention on Limitation of Liability of owners of Sea-going Ships		Y
1958	(Geneva) Convention on Fishing and Conservation of Living Resources of the High Seas		Y
1963	(Vienna) Convention on Civil Liability for Nuclear Damage	R	Y
1969	(Brussels) Convention on Civil Liability for Oil Pollution Damage		Y
	1976 (London) Protocol		Y
1969	(Brussels) Convention relating to intervention on the High Seas in Cases of Oil Pollution Casualties		Y
1971	(Ramsar) Convention on Wetlands of International Importance Especially as Waterfowl Habitat	R	Y
	1982 (Paris) Amendment	R	Y
	1987 (Regina) Amendments		Y
1971	(Geneva) Convention on Protection Against Hazards from Benzene (ILO 136)		Y
1971	(Brussels) Convention on the Establishment of an International Fund for Compensation for oil Pollution Damage		Y
1972	(Paris) Convention on the Protection of the World Cultural and Natural Heritage	R	Y
1972	(London) Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter		Y
1973	(Washington) Convention on International Trade Endangered Species of Wild fauna and Flora	R	Y
	1983 (Gaborone) Amendment		
1973	(London) Convention for the Prevention of Pollution from Ships (MARPOL)	R	Y
	1978 (London) Protocol (segregated balast)	R	Y
	1978 (London) Annex III on Hazardous Substances carried in packaged form	R	Y
	1978 (London) Annex IV on Sewage		Y
	1978 (London) Annex V on Garbage		Y
1974	(Geneva) Convention on Prevention and Control of Occupational Hazards caused by Carcinogenic Substances and Agents (ILO 139)		Y
1977	(Geneva) Convention on Protection of Workers against Occupational		Y

	Hazards from Air Pollution, Noise and Vibration (ILO 148)		
1979	(Bonn) Convention on the Conservation Migratory Species of Wild Animals	R	Y
	1991 (London) Agreement Conservation of Bats in Europe		
	1995 (The Hague) Agrican/Eurasian Migratory Waterbird Agreement (AEWA, 1995)	R	Y
	1996 (Monaco) Agreement ACCOBAMS		
1982	(Montego Bay) Convention on the Law of the Sea	R	Y
1985	(Vienna) Convention for the Protection of the Ozone Layer	R	Y
	1987 (Montreal) Protocol on Substances that Deplete the Ozone Layer	R	Y
	1990 (London) Amendment to Protocol	R	Y
	1992 (Copenhagen) Amendment to Protocol	R	Y
	1997 (Montreal) Amendment to Protocol	R	
1986	(Vienna) Convention on Early Notification of Nuclear Accidents	R	Y
1986	(Vienna) Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency	R	Y
1989	(Basel) Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	R	Y
	1995 Ban Amendment		
	1999 Protocol of Liability and Compensation		
1990	(London) Convention on Oil Pollution Preparedness, Response and Cooperation	R	Y
1992	(Rio) Convention on Biological Diversity	R	Y
	2000 (Cartagena) Biosafety Protocol	S	
1992	(Rio) Framework Convention on Climate Change	R	Y
	1997 (Kyoto) Protocol	R	
1994	(Vienna) Convention on Nuclear Safety	R	
1994	(Paris) Convention to Combat Desertification	R	Y
1998	(Rotterdam) Convention on the Prior Informed Consent Procedure for hazardous Chemicals and Pesticides in International Trade		

Regional and Sub-regional Agreements:

1950	(Paris) International Convention for the Protection of Birds		Y
1957	(Geneva) European Agreement – International Carriage of Dangerous Goods by Road (ADR)	R	Y
1958	(Geneva) Agreement – Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts	R	Y
1968	(Paris) European Convention – Protection of Animals During International Transport	R	Y
	1979 (Strasbourg) Additional Protocol	R	Y
1969	(London) European Convention – Protection of the Archeological Heritage	R	Y
1979	(Bern) Convention – Conservation European Wildlife & Natural Habitats	R	Y
1979	(Geneva) Convention – Long – range Transboundary Air Pollution	R	Y
	1984 (Geneva) Protocol – Financing of Co-operative Programme (EMEP)		Y
	1985 (Helsinki) Protocol – Reduction of Sulphur Emissions by 30%		Y
	1988 (Sofia) Protocol – Control of Emissions of Nitrogen Oxides		Y

	1991 (Geneva) Protocol – Volatile Organic Compounds		Y
	1994 (Oslo) Protocol – Further Reduction of Sulfur Emissions		Y
	1998 (Aarhus) Protocol on Heavy Metals	S	
	1998 (Aarhus) Protocol on Persistent Organic Pollutants	S	
	1999(Gothenburg) Protocol to Abate Acidification, Eutrophication and Ground-level Ozone	S	
1991	(Espoo) Convention – Environment Impact Assessment in a Transboundary Context	R	Y
1992	(Helsinki) Convention – Protection and Use of Transboundary Waters and International Lakes	R	Y
	1999 (London) Protocol for Waters and Health	S	
1992	(Helsinki) Convention – Transboundary Effects of Industrial Accidents		
1992	(Bucharest) Convention – Protection Black Sea Against Pollution	R	Y
1993	(Lugano) Convention – Civil Liability for Damage from Activities Dangerous for the Environment		
1994	(Lisbon) Energy Charter Treaty	R	
	1994 (Lisbon) Protocol on Energy Efficiency and Related Aspects	R	
1994	(Sofia) Convention on Cooperation for the Protection and Sustainable Use of the Danube River	R	Y
1998	(Aarhus) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters	R	

Y=in force; S=signed; R=ratified
and Romania

Source: UNECE

Capacity Building, Education, Training and Awareness-Raising: Romania's social, economic, political and historical situation plays a major role in the public's vision of environmental issues. The recent past is as important as the present context for understanding current perceptions of environmental problems. The interaction between civil society and organizations, such as NGOs, is deeply influenced by this historical background and can partly explain people's relatively weak participation in any kind of collective action. Various international and European development programmes present in Romania have brought an invaluable impetus to the reconstruction of civil society by explicitly encouraging the participation of NGOs in the democratic transition. Besides institutional information, most of the NGOs are very much concerned with information to the public. With the ratification of the Aarhus Convention, was created legal framework and the main issue now is just how to make use of it.

Information: Information is available at <http://www.mappm.ro>.

Financing: EU: The oldest pre-accession programme, PHARE, has been of major importance for Romania in the past few years. PHARE is still gaining importance and between 1998 and 2000 the MWEP implemented projects co-funded by PHARE-Environment (total budget US\$ 10.8 million), PHARE-Cross-Border Cooperation (total budget US\$ 9.2 million) and PHARE Multi-Country Programme (total budget US\$ 18 million). Within PHARE-Environment, there is a component for strengthening the capacity of the MWEP. As part of this cooperation, two "twinning projects" are being implemented jointly with France (water quality) and Germany (waste management). The new pre-accession programme, the Instrument for Structural Policies for Pre-Accession (ISPA), aim to develop transport and environmental protection infrastructure. For environmental infrastructure (wastewater, waste management and air pollution), grants of € 120 million per year will be available for Romania, from

2000 until 2006. Grants of the same amount are available in the transport sector and will be managed by the Ministry of Transport. SAPARD will be managed by an independent SAPARD implementing agency, which has been created within the Ministry of Agriculture. For the first year, grants totaling US\$ 166 million will be available for Romania. The MWEP will be responsible for issuing environmental agreements or permits for all projects. 19 projects for LIFE-nature and 37 for LIFE-environment have been submitted up to the autumn of 2000 and are assessed by Romanian and European Commission representatives. In the period from 1998 to 2000, the MWEP managed LIFE-supported projects for a total value of approximately €4 million.

International Financing and other Institution: The European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB) were identified by the MWEP as suitable partners for providing loans for co-financing under EU programmes, in particular ISPA. EIB requires (State) guarantees for loans; the World Bank, not in a position to provide loans to municipalities, has not provided any major loans for environmental protection projects in Romania so far, but some large industrial projects include environmental protection aspects, such as rehabilitations of: the petroleum industries; the power sector; and the mining sector. The GEF-World Bank granted project on agricultural pollution control has been negotiated and will enter, after the signature of the Grant Agreement, in its implementing stage. The total value of this project is US\$ 10,8 million; the Council of Europe Development Bank (CEB) recently provided a loan for the construction of flood prevention infrastructure and the rehabilitation of flood-damaged infrastructure. GEF is another major international donor to Romania. Several projects, mainly in the focal areas of biodiversity and international waters, have been implemented through UNDP and the World Bank. In the period from 1998 to 2000, the MWEP managed GEF-supported projects of a total value of about US\$ 15 million. USAID (REC): The programme is aimed at establishing partnerships with businesses or municipalities in the United States (US). An amount of US\$ 25 million has been made available for seven central and east European countries, to be disbursed over five years. Several grants have already been given to Romanian beneficiaries. UNDP: Ongoing projects in Romania include the GEF-funded project (US\$ 2 million) on capacity building for GHG emission reduction through energy-efficiency improvement, which is implemented in cooperation with the Ministry of Industry and Mineral Resources, and the Romanian Agency for Energy Conservation. Another ongoing project is the building of local capacities to implement the Local Agenda 21.

Bilateral donors: During the past five years, the MWEP has managed over 50 projects for a total value of some US\$ 50 million. Individual countries provide aid and assistance for these projects. For example, Denmark has been an important bilateral donor for environmental protection. Projects funded by Denmark include drawing up of two sectoral strategies for EU approximation on 'air quality and climate change' and 'industrial pollution control and risk management' and further assistance in the transposition and implementation of EU legislation on air pollution. Furthermore, two pilot projects on local air quality monitoring (€2 million) will start in 2001. The Netherlands is another important partner, offering assistance through the MATRA (i.e. Maatschappelijke Transformatie) Programme and PSO (Association for Personnel Services Overseas) scheme. Based on an agreement between Romania and the US, a USAID technical assistance programme is ongoing with the MWEP to promote modern and efficient legislation, and the future implementation of the law on the national environmental fund, which is in the process of being drafted. Japan, Switzerland (US\$ 6 million) and Norway are also involved in projects managed by the MWEP. Austria is co-operating with the Ozone Unit on projects concerning the protection of the ozone layer. Financing is provided also by the national budget.

Cooperation: See under the heading **Cooperation** in the various chapters of this Profile.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: This Ministry of Waters and Environmental Protection is the central public authority for environmental protection subordinated to the Government. The MWEPP has the following main responsibilities: policy making in the area of water and environmental protection at national level, drawing up the strategy and the specific regulations for developing and harmonizing these activities into the general framework of the Government policy and coordinating the implementation of the Government strategy in the concerned areas, accomplishing its role as a state authority for the synthesis, coordination and control in these fields. Also, Ministry of Waters and Environmental Protection is the National Sustainable Development Co-ordination Body. National Institute for Statistics, National Agency for Communication and Information, National Institute for Information and Documentation, Mayoralities, Environmental Protection Inspectorates and National Center for Sustainable Development help MWEPP in process of public information. Romania ratified the Aarhus Convention on Access to information, Public Participation in Decision-Making and Access to Justice in Environmental Matters by Law no.86/2000. Romania will develop subsequent legislation for a better implementation of Aarhus Convention.

The Romanian Environmental Law had special provisions in article 5 about public, NGOs, local authorities, trade unions, business and industry representatives, and scientific communities' involvement in environmental decision-making. Ministerial Order no.125/1996 on permitting procedure for economic and social activities having an environmental impact according to the environmental Law no.137/1995, in Annex 3 of this order is Procedure for the Public Debate.

Romania doesn't have a system of information on sustainable development, but information about sustainable development is available on National Center for Sustainable Development web page:

<http://www.sdnr.ro> and Ministry of Waters and Environment Protection's web page:

<http://www.mappm.ro>. National information on environment and development are integrating in National Sustainable Development Strategy. The short-term objectives of this strategy are: creating a national communications infrastructure capable to offer support for the introduction and intensive use of data processing capabilities at the local and central level of the public administration (up to the municipal level); and developing the national industry for products and services specific to the information and communications technologies, software industry, especially the software industry; and creating a framework that will encourage the use of information and communication technologies on a large scale in all economic and social fields and the harmonization with E.U. regulations in this field.

The medium- and long-term objectives of the strategy are: extending the communications infrastructure (up to the level of communes); and Romanian society should reach a level of data processing technology that will allow its integration into the European information society.

Currently, attention has to focus on how to apply the principles of sustainable development to the different areas of economic and social development. For Romania, sustainable development is not a matter of choice, one option among many others, but it is the only responsible way to plan medium- and long-term development in line with Romania's national interest and the requirements for international collaboration. Romania's European and Atlantic integration has been a primary objective which has been pursued in varying degrees by all governments since 1989, and has always received the support of the Romanian people. This requires Romania to adopt a coherent set of values corresponding to those of the Western civilization. Correlating the objectives of national development with the experience already gained by the West regarding the quality of life and the interest in the well being of future generations is part of this integration process. Therefore, the first national strategic study for sustainable development does not simply attempt to follow the most recent trends of the international scientific community.

The endeavor to incorporate the philosophy of sustainable development in any national or local development strategy is essential for Romania to cope with the requirements of, and fit into, the complex world we live in today.

Sustainable development means progressive improvement and preservation of the population's well being, paired with rational use of natural resources and conservation of ecosystems. The fundamental objectives are: increased standard of living and prosperity for individuals and society as a whole at the national level; economic development within the sustainability limits determined by the natural capital in a way that should guarantee the quality of life for future generations. Main objectives include the following: guarantee public health; ensure complementarity's and correlation among all economic and social sectors for the purpose of sustainable human development; establish those sectors that could potentially be competitive as priorities for sustainable development in the context of the overall international trends and in accordance with the international commitments Romania has made; adjust the size of social and economic structures, to reshape them and to transform them into a sustainable system; ensure the continuous and stable improvement of the standard of living in accordance with the requirements of E.U. integration; stop the deterioration of the country's natural capital and to start rebuilding it; develop a coherent legislative and institutional framework, compatible with that of the E.U. countries, and to consolidate democracy by encouraging civic participation; create human resources meeting the international scientific, technological and information standards in all social and economic sectoral; ensure continuous monitoring and evaluation of economic, social and ecological; and performance within a system of qualitative and quantitative indicators.

Major Groups' involvements are as follows: Romanian Academy–Black Sea Foundation; Universities; Ministry of Waters and Environment Protection (Environmental Protection Inspectorates at local level) in cooperation with other ministries involved in sustainable development; National Center for Sustainable Development; Mayoralities; Trade Unions; and NGOs. The private sector has an important role in providing information that will be utilized in the future actualization of National Strategy of Sustainable Development and in different other decisions, especially in environmental protection. Major groups consulted and involved in the development of an information system of indicator programme for sustainable development are institutes of research coordinated by the Ministry of Waters and Environment Protection. These include: National Institute for Research-Development for Environment Protection; National Institute for Research-Development for Meteorology and Hydrology and National Institute for Marine Research-Development; National Institute for Research and Planning of Forest. Romanian Academy and institutes, NGOs, civil society, syndicates, other stakeholders, etc. are also consulted and involved in the development of an information system of indicator programme for sustainable development.

Programmes and Projects: In Romania information is disseminated by the mass media, and the country doesn't have a really national information network. A programme for national information network will assist in: Creating an information core, consisting of lists and classifications of general interest, permanent registers (population, territorial-administrative units, road infrastructure, socio-economic agents, general surveys, etc.), public databases (legislation, synthetic indicators, patrimony objects, licenses and copyrights, etc.); creating a data communications infrastructure for the public administration sector, including the justice system and ensuring the existence of a legal framework for the development and use of information technology, that should be compatible with that currently used in European countries: freedom of information, data protection and security, personal data protection, status of electronic documents, intellectual property in the field of databases, regulation authority and data processing control, responsibilities and sanctions for computer crimes. Information at national and local levels are diffused by a national and local televisions and radio, national and local newspaper and Internet. Romania has projects proposal aimed at strengthening electronic networking capabilities, such as promoting communication networks.

Status: The following actions must take priority: creating the National Data Systems Infrastructure: infrastructure for communications, descriptions, registers and data banks of national interests; stimulating

the development of information and communications technology products and services; priority should be given to the development of software for export; encouraging data processing projects whose aim is to support the reform in the public administration and the judicial sector, and to improve public services for the population; active participation in European programmes dealing with information technology in society, and harmonizing national legislation with the European legislation; ensuring the training of highly qualified specialists in the field of information and communications technology, and increasing professional expertise by means of national research and development programmes; and continuous training and education of the public, especially the young people and the active workforce to prepare them for the information society. Information on sustainable development for commercial, private and public sector is made available by newspaper, print material and Internet (www.sdnr.ro and www.mappm.ro). Without the considerable contribution of R&D, Romania's sustainable development is inconceivable. In future, R&D will require certain interdependent priorities to be set, of which the most important are listed below: Creating a national system for the propagation of technology whose main purpose will be to ensure the rapid transfer of innovation and technology throughout the country and abroad, even though the purpose of research in this case is rather applied, experimental, for debate. This system would facilitate a balance between supply and demand as well as the co-financing and the introduction of new technologies; Developing research centers at the company level, based on the efforts of each individual firm, but with some support from the government's special funding programme; Better motivation of and control over national research programmes financed by the government on a competitive basis and in accordance with the requirements of the reform and of the sustainable development strategy; Introducing a wage structure that rewards scientific value and practical results of the research; In a society that is becoming increasingly information-oriented, harmonizing research and development with the needs of industry must concentrate on the following sectors: telecommunications, audio-visual, electronic commerce, as well the training of the workforce in this sector; and larger participation of the Romanian R&D in as many forms as a channel to international cooperation, especially those organized by the E.U. countries. Romania must base their decisions on facts, using the most recent and precise information available, as well as the results of scientific studies. Hasty actions based on inadequate documentation are countered productive, since fixing the potential damage could be costly and time-consuming. The overall principles of sustainable development have been established, though they will, to a certain degree, still be the subjects of debates at national and international level. Economic development is important for any society, but the benefits of economic development must exceed its costs. These costs also include the price of environmental protection. Romania has project proposal for attracting private or foreign investment, but for the moment does not have running projects. Social and environmental field need the most immediate attention in improving the flow and management of information.

Major issue for Romania is deficiency of communication, which creates institutional, financial, and technique problems. Romania faces financial challenges in its effort to develop the use of indicators or developing a national system for sustainable development. Ministry of Waters and Environment Protection collaborates with National Institute for Statistics and the Regional Environmental Protection Inspectorates to devise a better data collection system whereby the transmission of this information is based on Internet techniques. Web site is available at www.sdnr.ro and www.mappm.ro.

Capacity-Building, Education, Training and Awareness-Raising: In Romania capacity-building workshops on sustainable development are organized and participants include: civil society; business field; local authority; central authority; institute of research; and the mass media etc. These workshops are widely published in the newspaper and television. In addition, public sector can use information of internet (www.sdnr.ro; www.mappm.ro). National Sustainable Development Strategy is a public

document and is available on www.sdn.ro. Romania has training and international programmes for experts. The Ministry of Waters and Environment Protection carry out responsibility for collection, assessment, management and dissemination of information in collaboration with National Institute for Statistics, Environment Protection Inspectorates, and National Center for Sustainable Development and institutes of research.

Research and Technologies: Romania is in course of implementation of geographic information systems for example; Satellite technologies and data transmission in real time.

Financing: Total (current and capital) spending for research and development activities is 12,5 billion lei current prices. Current spending is 11,8 billion lei current prices. Capital spending is 0,7 billion lei current prices.

Cooperation: Romania has a good collaboration for Local Agenda 21 implementation with United Kingdom, Canada and Turkey. For example in 1-7 October, at Istanbul, was a workshop for experience exchange between Turkey, Moldova, Romania and Turkmenistan. Governments of United Kingdom and Canada offer assistance (financial, technical and training) for Local Agenda 21 implementation. Romania has collaboration with UNDP for elaboration of National Sustainable Development Strategy (Project ROM 015/95) and Local Agenda 21 (Project ROM 012/98). Romania doesn't have cooperation on transfer technology and know-how on the development and management of national information systems. In National Sustainable Development Strategy are stipulated: Supporting the development and transfer of technology for the development of the information society; and stimulating the supply of information and communications technology products by concluding strategic partnerships with important procedures in the field and granting of fiscal facilities, etc. Romania has adopted in October 2000, through a common Ministry Order between Ministry of Waters and Environment Protection and National Institute for Statistics a statistic classification system, elaborated within PHARE Project RO 9703, in concordance with environment protection evolution in national economy and European Union integration requirements.

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CHAPTER: INDUSTRY

Decision-Making: The Ministry of Industry and Resources is the specialized body of the central public administration, responsible with the development and implementation of the industrial policy. Other coordinating institutional bodies include the following: Ministry of Development and Prognosis is the specialized body of the central public administration, subordinate to the Government which implement the strategy and Government programme in order to promote the social and economic development policies, stimulate the foreign investments in Romania and to draw up analysis and forecasts regarding the development of the Romanian economy; Competition Council as autonomous administrative authority in the field of competition and Competition Office as specialized body sub-ordinate to the Ministry of Public Finances, are entitled to apply the provisions of the Law 21/1996 on competition and Law 143/1999 on state aid, aiming at protecting, supporting and encouraging the competition and enhancing a normal competitive environment. The Authority for Privatization and Administration of the State Participation Administration, established in December 2000 through re-organizing the State Ownership Fund, is responsible for the implementation of the privatization and restructuring strategy and for the administration of the state shares in the companies included in its portfolio. The Ministry for Small and Medium Enterprises and Cooperation is the governmental institution responsible with promoting of policies in the field of SMEs and cooperation. The Ministry of Waters and Environment Protection is the governmental institution responsible with environment protection policies. The Ministry of Education and Research is the governmental institution having responsibilities in the fields of research, development and innovation as well as in the implementing their results. The Ministry of Communications and Information Technology is the governmental institution responsible for the Information Technology (IT) society development. Ministry of Agriculture, Food and Forests are the governmental institution having responsibilities in the food industry. The Ministry of Labour and Social Solidarity is the governmental institution which ensures and co-ordinates the implementation of the governmental strategy and policies in the field of labour, social protection and solidarity. It has important responsibilities regarding employment, training and professional, especially as a result of restructuring, privatization or companies' closure. In this respect, the National Agency for Employment and the National Adult Training Board has been created. The Chambers of Commerce, Industry and Agriculture at national and regional level are offering the companies access to the information regarding the business environment, privatization, restructuring-upgrading, financial market, stock exchange market, extra-stock exchange market, quality assurance and products assessment, consulting (including Euro Info Centre).

Romania promotes offensive industrial policies, meant to ensure a higher adaptability to the exigencies imposed by the market, avoiding thus a protectionist policy considered being unproductive, in the context of international realities. The neutrality of incentives is compatible with competition, entailing competitiveness, and the competition mechanisms are in their turn generated by the market. That is why the Government has in view the strengthening of economic operators' capacity to face the competition on the international market and the economy malfunctions, the key of the issue being adaptability, under the conditions of world economy dynamism and globalisation. In this context, the main initiative and responsibility regarding the structural adjustment belongs to the economic operators, the public authorities having the role to stimulate, to support and to speed up the processes by establishing, developing and improving an appropriate institutional and legislative framework.

The Government of Romania sustains and applies promotion of social cohesion, in this case by ensuring a wide consensus in adopting and approving the Paper for Industrial Policy, in order to extend the practice aiming at the civil society participation in the major decisions of the Romanian society. Thus, the debate of the Paper for Industrial Policy involved the social dialogue partners (unions and employers) and the main influencing factors of industrial activities (professional associations, non-governmental organizations, authorities and public institutions, etc.)

Programmes and Projects: Ministry of Industry and Resources elaborates, mainly, the strategies and industrial policies concerning: the development of the energy sector; restructuring and privatization of the companies under its coordination; and the development of the national system of quality infrastructure in the industry. Ministry of

Industry and Resources is entitled to elaborate and promote main projects concerning industrial development, particularly those related with power energy, oil, gas and mining on the basis of external financing or co-financing.

Status: Romanian processing industry in the period 1970-1980 was based largely on licenses and know-how from well-known international companies, as well as on equipment, machinery, installations and plants purchased from industrialized countries. In the same period, the excessive development of production capacities had in view, besides ensuring the domestic needs, meeting the international requirements, out of which a major share had the COMECON market, which disappeared.

Since 1999, the processing industry has maintained some strong points, which offer real opportunities for revival and refer mainly to the following: keeping an important production potential, partially used, depreciated and obsolescent; using the well qualified labour with low costs; addressing to the domestic market with a high absorption potential capacity, the second in size from Central and Eastern Europe, after Poland; using domestic raw materials, in a significant proportion (crude oil, natural gases, wood, hides, wool, metallic and non-metallic ore, etc); and operating in a geo-strategic region, favourable to commercial and processing flow development, between Western Europe and the Black Sea-Middle East-Central and Eastern Asia region.

In Romania, the basic rules of competition are set up after ten years of transition, based on the market and free initiative. In order to ensure a business environment viable and open, the Government of Romania passed to a sustained action to perform the legislative (revision of legislation), alongside with the completion of the legislative system and ensuring a proper and operational institutional framework, harmonized with those in the European Union. Thus, the process of transposing the *acquis communautaire* has been accelerated; measures are taken to reduce bureaucracy, including the setting up or development of small and medium enterprises aiming at ensuring a stable and predictable legislative framework. In order to supplement the necessary financial funds, required for rapid achievement and under economic viability conditions of the restructuring and privatization process, the Government of Romania proceeds to providing attractive conditions for participation of foreign investors, simultaneously and with no discrimination with the local investors, which may contribute to the increase of industrial performances and competitiveness and to the accession of Romanian economy to European and world economy.

The result of effective implementation of market economy rules entailed changes in the Romanian economy, especially by a continuous raising of private initiative. The private sector became a source of economic growth and contributed to the creation of competitive economic structures. The Government of Romania continues the restructuring /privatising processes of the state-owned enterprises, mainly in the area of the present monopolies and finding the solutions to make them operational on a competitive basis.

The main objectives on short and medium term are as follows: Development of a viable and opened business environment through strengthening a stable, simple and coherent legislative framework accompanied by a suitable institutional framework; accelerating the companies restructuring based on the principle of economic efficiency, including closure of non-viable capacities; stimulating the privatization process by applying various privatization methods which will allow the acceleration and efficiency of this process; developing the free, competitive market, and improving the activity of economic operators by continuing the legislative harmonization process and the effective implementation of the policy in the field of competition and state aid; developing the IT use in the industrial sectors by implementing the strategy for development of IT and communications; promoting the direct investments by developing and improving the legislative and institutional framework in order to ensure the technological transfer, increasing the management performances and improving the Romanian products access on the international markets; promoting the intangible investments in human resources, research-development and innovation, ensuring the quality and conformity assessment of the products; developing continuous training programmes aiming to adapt human resources to the developments in the field of economic restructuring and introduction of new technologies; developing industrial cooperation by identifying and applying specific

instruments to sustain the industrial initiatives; supporting the SMEs development by facilitating the access to financing sources, assistance, consulting and information; developing the national operating market of the industrial products; Ensuring the compatibility of technologies and industrial products with the environment protection requirements; and Promoting the social cohesion by enhancing the consultation procedures with all the industrial field actors, in order to extend the participation to the major decisions process and obtaining the support of the social partners in implementing the structural adjustments.

Capacity-Building, Education, Training and Awareness-Raising: Investment in human capital is a priority of the Government of Romania, an important component in promoting intangible investments, in parallel with a higher capitalisation of human resources. This can be achieved by a higher flexibility of labour and by increasing its mobility (re-adjustment) and training/specialisation, so as to ensure a balance between offer and demand on the labour market, as well as the know-how development, vocational training and human resources management.

Information: A Web Site will be open for industrial policy implementation in the near future.

Research and Technologies: The Government is concerned to lay stress on actions in the R&D field by an interdisciplinary and multi-sectoral approach, taking into account the market requirements, with which the industry must be in permanent touch. Public authorities have as main responsibility promotion of efficient R&D programmes, oriented towards the market requirements and closed related to the concerned economic operators, for maximum benefits. Another important element for the development of intangible investments consists in stimulation and development of absorption and spreading capacity of R&D results in the economic environment, by: development of activities and infrastructures specialised in assistance and information in the technological field, as well as for technological transfer, at the national and regional level; stimulation of technological parks development; and providing a favourable legislative framework to protect the results of R&D activity, including the favourable framework for industrial and intellectual propriety, especially with regard to patents, trademarks, design, origin, etc.

Financing: The national budget, private sector partnership and external assistance provide financing.

Cooperation: Industrial cooperation development involves measures for identification and removal of excessive financial and tax barriers, simultaneously with the development of specific instruments and support of industrial initiative aiming at market growth, especially for small businesses. The major responsibility in developing the industrial cooperation schemes belongs mainly to the companies and businessmen, but a major contribution in identifying and implementing some specific measures and actions to this purpose have the public authorities.

The Government of Romania has in view the extension of subcontracting system, both for the domestic market and for the foreign market, by which small and medium-sized enterprises become subcontractors for great industrial companies, ensuring thus a good support for industrial cooperation development and for trade exchanges.

Further measures of the Government of Romania in sustaining the industrial cooperation on domestic and international market shall focus on the following: strengthening the investment and industrial cooperation climate, based on an appropriate legislative framework and on bilateral agreements signed between countries regarding investments protection; finding out new opportunities and industrial cooperation schemes, finding new partners and spreading the information on the market and/or to potential partners; and organising meetings, round tables, and support of viable initiatives and assistance in opening and developing the interest of foreign partners for industrial cooperation.

With a view to developing industrial cooperation, the Government envisages the identification of new keys for promoting new financial “engineering” projects in the fields of utmost interest (environment protection, energy efficiency, etc.) including “off-set” arrangements, an advantageous contract form determining a foreign contractor to invest in the purchasing country.

To strengthen the regional industrial potential and to develop economic cooperation, the Government pursues promotion of international specialisation, based on industrial complementarity with Member States, Central and Eastern European countries or other nearby areas.

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: The Ministry of Tourism as the National Tourism Administration, member of the Romanian Government, is in charge of coordination and implementation of the general tourism development strategy. Consultative Council has been set up as well, which is composed of representatives of the public sector (Ministry of Tourism, local authorities, Tourism Promotion Office and Licensing and Classification Office) as well as the private sector (NGO s related to the tourism industry) and has a major role in the decision-making process. Meetings of the Council take place every month and the agenda of these meetings includes important issues to be discussed and agreed upon. Following the Council's conclusions, the Ministry of Tourism takes the necessary measures to implement the proposals. This mechanism allows both public and private sector to be better involved in the decision-making and implementation process. At the local level, the County Councils are responsible as local authorities of public administration. In line with the recently adopted law for regional development, regional agencies and committees will be set up. These will have an important role for sustainable development in terms of tourism sector.

The institutional reform in this sector began with the creation of two independent bodies namely: Tourism Promotion Office and Licensing and Classification Office. Both of these offices have regional representatives. The Tourism Promotion Office regional representatives play an important role in stimulating cooperation between private and public sectors in order to implement programmes for tourism promotion. The Ministry of Tourism has initiated and the Romanian Government has approved the necessary legislative framework in the tourism sector. All the laws and regulations related to this sector include special provisions for the protection of the environment. In this way, law protects natural resources and they are grouped into "protected areas" which benefit from special conditions for development and preservation. There are, in addition, specific standards within the legislation in tourism promoted by the Government. These refer to the conditions required for the tourism activities in order to avoid damage to nature and to ensure its preservation and protection. These conditions apply for all activities: transport, accommodation, catering, balneary treatment a.s.o. setting up Codes of Practice, Standards or Guidelines by industry itself is at an incipient stage in Romania. However, some trade associations (i.e., National Association of Travel Agencies, Romanian Association of the Mountain Guides) have successfully promoted their own Codes of Practice. The Hotel Industry Federation has also started to promote its own Guidelines for specific activities. All these codes are voluntary. Industry has reacted positively to these codes and standards. Encouraging signs are visible on behalf of the tourists themselves too. Promotion campaigns are necessary to be carried out in order to create a true culture in this matter.

A Medium and Long Term Tourism Development Strategy has been released by the Ministry of Tourism and approved by the Romanian Government. The document is based on the recommendations included in the Tourism Master Plan for Romania produced within EC-PHARE Tourism Development Programme. Sustainability is the basic concept of this strategy. Sustainable development is the overall objective of the Tourism Development Strategy. This includes: product development; legal framework improvement; institutional reform; human resources development; marketing and promotion improvement; tourist protection and safety of travels; and natural environment protection, which includes: Territorial and Urban Planning process to ensure that tourism interests are represented and protected; cooperation with the Ministry of Waters and Environment Protection to address environmental impact and management, pollution; control and upgrading; sewage collection and treatment facility improvements in coastal resorts protecting and conserving beaches and of coastal landscape; raising environmental awareness; and

ecotourism and agrotourism. The above-mentioned strategy refers also to measures for promoting ecotourism and nature-based tourism. These measures have been translated into a proper legislation.

Programmes and Projects: For the eight regions of the country, the Ministry of Tourism has identified major projects aiming to promote sustainable development in Romania. Areas and locations with tourism potential are identified for a long-term product development strategy. However, in the short to medium term, efforts will be focused on priority areas and resorts, to avoid the dispersal and dilution of resources. The first phase priority is to improve and consolidate the product in areas that are currently most popular with international tourism and where the tourism facilities and infrastructure generally exist. These areas are: Bucharest; priority Black Sea coast resorts (Mamaia and Neptun) and Constanta; priority health spa resorts; Brasov-Sinaia area for winter and summer tourism; Sibiu area for cultural, circuits and hiking; North Moldova region for cultural and circuit tourism; Danube Delta for ecotourism; and key entry towns, business centers and transit points. Micro-projects implemented by either local consortia or trade associations are encouraged by the Ministry of Tourism and where possible, supported from different funds. Examples of micro-projects co-financed by Ministry of Tourism from CE-PHARE Programme funds include: Lala Reservation, Center of Ecological and Tourism Surveillance; Environmental action pack for Romanian hotel and restaurant industry; Specific training in environmental protection conservation and ecology; Marking tourist tracings in the mountain area; Monitoring lake water pollution levels and protection works and depollution; Environmental protection camp in different mountain places; Depollution, sign posting, protection works in scientific reservations; Afforestation works; and Depollutions actions in Danube Delta

Status: Romania is a country in transition to a free market economy. The Romanian tourism industry is characterized by declining domestic and international demand and an outdated tourism product and service standards, which do not meet the expectations of western tourists. Major progress and improvements have been observed in the last two years. Despite the problems, tourism is a significant industry in Romania. It counts for: total contribution to Romania's economy estimated at US\$ 1000 million direct and indirect employment of 400,000 jobs US\$ 526 million in foreign earnings; % of the goods and services export; and % of GDP. Romania has a variety of tourism assets and attractions which have been developed and promoted for both international and domestic tourism: natural attractions (i.e., mountains, the Black Sea coast, River Danube and the Danube Delta, flora and fauna, natural spa resources, areas routes of scenic beauty and caves), historic and cultural attractions and other attractions such as handicrafts and performing arts, festivals and vineyards, conferences, exhibition and business related tourism. All these have been used in building tourism products and in some cases, over use, in addition to the industrial pollution, have conducted to damaging the environment.

Preservation and protection of all the resources became more visible in the last years. The awareness of both tourists and the local population has improved as a result of new legislation. Procedures for approval of development permits in tourist areas have also been improved, and the Ministry of Tourism cooperates with the Ministry of waters and Environment Protection in order to draw up criteria for the use of prospective developers.

The followings are a few illustrative activities, which are geared both to sustainable tourism and to ecotourism and nature-based tourism: Specific Training in Environmental protection Conservation and Ecology, a training programme centered on the National Club for Youth, representatives from NGOs concerned with environment, representatives from the Ministry of Youth and Sports, the Ministry of Tourism and other concerned authorities; Project for Publishing a Guide Book of Romania's Caves; and Monographs of the Tourism Sign posting and Architectural Monuments, a programme aiming at

involving a large number of NGOs in the effective protection of the caves and environmental education of the population and tourists; Youth Training in Environmental Protection and Ecology Through Tourism, a programme for the ecotourism education of those who participate in cleaning tourism areas and remaking the sign posting; it was also designed for dissemination up-to-date information on the impact of tourism on environment and its protection. In the Tourism Law it is stated that all operators should take the necessary measures to protect and enhance the natural environment. Basic criteria for classification and licensing accommodation establishments refer to minimal conditions of operating taking in considerations the environmental protection. General conditions for development of tourist areas and related activities (tourism transport, accommodation, catering, use of beaches, mountain slopes and resorts etc.) are strictly defined by regulations. These include also penalties for environmental damages.

Capacity-Building, Education, Training and Awareness-Raising: Training for tourism in Romania is conducted by four entities: Department for Economics at the National University; Lycees with tourism profiles (Ministry of Education and Research); National Institute for Tourism Training and Management (INFMT) which is controlled by the Ministry of Tourism; and Ministry of Labor and Social Solidarity which operates a number of skills programmes for tourism at County level. INFMT is the major center for training in Romania. It comprises an integrated complex with the training school, Park Hotel and Tourist Hotel in Bucharest. It also has a branch, which operates in Constanta, the major city on the Black Sea coast, a traditional tourism destination in the country. On the job training has an important role in re-skilling and upgrading of the workforce. In Romania, short courses have been developed to strengthen the INFMT provision of supervisory and industry based trains the trainers. Mobile training teams for advising managers on commercial operating systems are in place. Flexible part-time college training is also available for workers who cannot take extended periods away from work. The current system is easily accessible. Competent management training has been also developed in Romania. There are specific curricula related to tourism management, tourism and economic and social planning, economic impacts of tourism, socio-cultural impacts of tourism on a host country, tourism policy and alternatives for development, the legal framework for tourism development, tourism planning and tourism marketing. There are several projects implemented by NGOs mainly, co-financed by Ministry of Tourism, to raise the awareness of the tourists and host population on sustainable tourism issues. A pilot project for rural tourism development is implemented by the National Association of Rural, Ecological and Cultural Tourism addressed to rural areas in order to stimulate local people for tourism related activities, to protect nature and preserve cultural heritage, and to promote holidays in the countryside. A major component was to create a friendly environmental attitude and operation in travel and tourism. Setting up an Ecological Center in the Rodnei Mountain is implemented by Transilvania Business Center having as objective to create a center for ecological actions in the given area and to promote the center among other associations and tourism developers. The main activities were oriented to cleaning paths and the lake waters, restoration of tourist identification panels and notices of the Lala Lake reservation, improving signposting, monitoring pollution levels in lake and press conference and campaigns. The project aimed to encourage walking tours and trekking as a natural based tourism and was addressed to the tourists, which love to walk along the mountains. Environmental Action Pack was implemented by the Romanian Hotel Industry Federation, and the objectives were to create a national awareness through communication of environmental issues to industry operators and staff, recruit volunteers and facilitators, involve new staff and reward establishments and individuals for their efforts, performance and achievements; to give a better understanding of the environmental issues for the new generation of hotel and restaurant industry students; and to create a national positive attitude for the air quality, saving energy and water supplies, waste and sewage disposal management. The Ministry of Tourism includes a Strategy for Development

and Regulation Department, which has a rich data bank on different issues related to sustainable tourism. INFMT has been assisted through the EC-PHARE Programme in developing and upgrading the capability to provide useful information and documentation on sustainable tourism. The Institute has a branch in Constanta, the most important city on the Black Sea coast. In Brasov, the most developed mountain area has been set up a Resource Center for Tourism, which can provide technical assistance for tourism developers. The Tourism Promotion regional offices play an important role in providing the necessary assistance to the industry and local key-factors in designing and implementing suitable actions and measures for a sustainable tourism development. The marketing and promotion strategy is especially designed to encourage travels and holidays to unspoiled places, meaning that the message is addressed toward the environmentally conscious tourists.

Information: The following kinds of national information are available to assist both decision - makers and the tourist industry in promoting sustainable tourism: Ministry of Tourism - "Medium and long term strategy for tourism development"; Tourism Master Plan for Romania; and The Romanian Research Institute for Tourism - data base. The Romanian Research Institute for Tourism has a complete database on the characteristics of all tourist areas in the country. Potential users have access to all information and documentation at the Ministry of Tourism. For the near future it is planned to connect both Ministry of Tourism and Research Institute for Tourism to the Internet. For the use of the Ministry of Tourism, local authorities and business community or any other developers, the Research Institute for Tourism has developed a basic concept for and sustainable development indicators. These are taken into consideration when releasing development permissions. There were also identified indicators for the assessment of carrying capacities; vehicle traffic and pedestrian numbers control; visitor management plans in National Parks and Protected Areas; and the levels of hunting operations to ensure they remain within sustainable limits have been proposed.

Research and Technologies: The current legal framework indicates the basic requirements for the activities discussed above. However, the lack of modern technologies creates temporary difficulties in implementing projects and programmes aiming at protection against unsustainable development. Priorities lie particularly in efforts to upgrade sewage collection and treatment facilities, acquire adequate equipment and technology for the industrial pollution control, and upgrade the facilities for recycling. Environmental management systems are applied in hotels and other tourist establishments. The Romanian Hotel Industry Federation has succeeded in implementing a project to review environmental practices and to develop a national environmental policy for hotel and restaurant industry in order to create a quality environment management programme and to involve operators and industry staff in these efforts.

Financing: For the development needs of the Romanian tourism industry a Special Fund for Tourism Promotion and Development has been proposed by the Ministry of Tourism and approved by the Government and Parliament. In this way, the Ministry of Tourism can provide tangible assistance by co-financing projects proposed by industry (i.e., creation and tourism product development, promotion of environmental awareness among local residents and business in tourism areas, educational programmes for visitors and tourists, promotion of codes of conducts in this matter, environmental preservation and protection etc.).

Cooperation: In elaborating the tourism development strategy, the Ministry of Tourism has considered the good practice and experience of many countries and destinations recognized as models to be followed. The Ministry of Tourism has benefited from European Union assistance through PHARE-programmes

with a total budget of 10 millions ECUs during the last six years. The objective of the programme was to assist the tourism industry to make the transition from operating in a centrally planned to a market environment. It is understood that EU includes “model destination” countries for Romania. The strengthening of the role of private sector and non-governmental organizations, in addition to decentralization are two key words of the reform in the Romanian tourism industry. Setting up the Consultative Council besides the Minister of Tourism, gathering both local authorities and trade associations, was the first step to a better cooperation with the above-mentioned entities. Local tourism development planning process is made with the consultation of the Ministry of Tourism. The improvements of the legal framework are also discussed with local authorities and tourism sector associations. Further developments (i.e., regional development agencies and committees created by law) will allow a better partnership at decentralized level between all the institutions interested in a sustainable tourism development. Romania has concluded agreements in the field of tourism with more than 35 countries worldwide. These comprise specific provisions aiming to encourage cooperation on different issues related to sustainable development: exchange of information and experience, documentary visits, round tables and seminars, training, marketing and promotion etc. At the same time, Romania is an associated member of the European Union. The European Agreement provides the broader concept for the necessary framework for sustainable development promotion. Romania is a member of the Black Sea Economic Cooperation (BSEC), a regional organization committed to engage in economic cooperation and to encourage the free movement of goods, capital, services and labor of eleven countries riparian to the Black Sea. It is also member of the Central European Initiative (ICE), another regional organization of some Central and Eastern European countries. In both organizations, the Romanian Ministry of Tourism is an active member in the tourism committees.

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