

SANITATION COUNTRY PROFILE

ROMANIA

Decision-Making

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

Programmes and Projects

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

status

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

Capacity-Building, Education, Training and Awareness-Raising

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

Information

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

Research and Technologies

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

Financing

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

Cooperation

- A. Basic Sanitation
- B. Solid Wastes
- C. Hazardous Wastes
- D. Radioactive Wastes

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 Environment and Waters Management acts as a supervising authority.

The Ministry of Environment and Waters Management (MEWM) 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, Forests and Rural Development (MAFRD) 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 (MAFRD and the MEWM) 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 Economy and Trade is responsible for fuel-quality policy and legislation. The Ministry of Environment and Waters Management 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 2000-2003, 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 (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.

A. Basic Sanitation: 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. Governmental Regulation 981/97 stipulates on the status of 'Apele Romane' and on water and waste water charges. The responsibility for waste water disposal and treatment belongs to the local authorities. For aspects related to freshwater, see under the Freshwater Profile.

B. Solid Wastes: The management of waste at central level is carried out by the Ministry of Economy and Trade; Health and Family; Public Works, Transports and Housing; Ministry of Agriculture, Forests and Rural Development; National Defense and Public Administration. At the territorial level there are: agencies 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 Environment and Waters Management (MEWM) has been designated as the main competent authority responsible for management of waste (including solid waste and hazardous waste). MEWM 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.

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.856/2003 on waste inventory and evidence; Governmental decision no.173/2000 on PCB/PCT (hazardous waste) and M.O. no.279/2002; Governmental Decision no. 662/2001 on used oil (hazardous waste); and Governmental Decision no.1057/2001 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 (Governmental Decision no.162/2002 and M.O. no.1147/2002); waste incineration (Governmental Decision no. 128/2002, M.O. no. 1215/2002); import export and transit of the waste (Governmental Decision no.1357/2002 and Governmental Decision no.228/2004); management of packaging and waste packaging (Governmental Decision no. 349/2002 and M.O. no.1190/2002)

C. 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 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.

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, such as the Law no. 426/2001 that approved the UG nr.78/2000 on waste management. 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.

Romania adhered to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade through Law 91/2003 and now it's under signature process a Governmental Decision for application PIC procedure. 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.(M.O. no.279/2002) Romania participated in the negotiating process for the new international Convention on POPs and signed it this year in Stockholm. See also under Solid Wastes.

D. Radioactive Wastes: The legislative framework related to the field of radioactive waste include Law no 111/1996, with subsequent modifications and completions, on safe deployment of nuclear activities and Law no. 320/2003 for approving the Governmental Ordinance no. 11/2003 on the management of spent nuclear fuel and of radioactive waste.

The National Commission for Nuclear Activities Control is the national competent authority in nuclear field, set up as a legal person under the co-ordination of the Prime-Minister and having responsibilities of regulation, authorization and control. The National Commission for Nuclear Activities Control is empowered, according to Law 111/1996 with subsequent modifications and completions, to issue regulations for detailing the general requirements for nuclear safety, for protection against ionising radiation, for quality assurance, for control of non-proliferation of nuclear weapons, for physical protection, for transport of radioactive materials, for management of radioactive waste and nuclear spent fuel, for intervention in case of a nuclear accident, including authorization and control procedures, realisation of items and services dedicated to nuclear installations, as well as any other regulations for the authorization and control activity in the nuclear field.

The National Radioactive Waste Agency is the national competent authority for the safe management of spent nuclear fuel and radioactive waste, including final disposal, under the sub-ordination of the Ministry of Economy and Commerce. Its main tasks according to the provisions of Law no. 320/2003 include: to prepare the national strategy in the field, to issue technical specifications for each stage of spent nuclear fuel and radioactive waste management, to coordinate the decommissioning phases of nuclear installations, to coordinate the preparation of feasibility and siting studies, design, construction, commissioning and operation of final repositories..

The radioactive waste produced in Romania, originating from medical or industrial activities, is 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 storage facility. Short-lived and intermediate waste is intended to be disposed in a near surface repository that is expected to be built until 2010. 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 Fundamental Norms on the Safe Transport of Radioactive Materials, approved by the Order of CNCAN President no. 373/2001.

Programmes and Projects:

A. Basic Sanitation: 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: 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); etc.

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.

B. Solid and 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, and now it's in progress a Twinning project in field of chemicals with the Austria as partner.

The National Environmental Action Plan contains 5 projects subdivided into 56 sub-projects on industrial and municipal waste management in different counties. National targets involve: reinventing, minimization of waste; reusing (packing, spare parts, industrial used waters); recycling of waste (paper and cardboard, glasses, metals, textiles, betterers, and used oils); recovery of waste as energy resources; etc.

C. 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: *Socio-economic aspects*: 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.

Land: 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 on 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 HNO₃-HSO₄-HClO₄ 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 than 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.

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.

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.

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.

Tourism is another 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.

A. Basic Sanitation: 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, including waste and water 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.

Waste water discharge in drainage channels or in effluents and slag and ash dumps have negative effects on environment.

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.

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.

The registered incidence of diarrhea 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).

B. Solid and Hazardous Wastes: 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.

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).

Industrial landfills: 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.

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 mechanic al vibrations	187,876	67,720	492

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.

C. 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. 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 leveled waste is cemented and sent also to the national radioactive waste repository Baita Bihor for disposal.

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. During 1997-2000 some uranium

mines were closed and now they are under conservation. The funds for the restoration of the environment around these mines were provided by Governmental Decision (GD no. 17/1999 and GD no. 720/1999)

Capacity-Building, Education, Training and Awareness-Raising: A project, PHARE 98, “Strengthen the institutional and administrative capacity of 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.

A. Basic Sanitation: 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.

B. Solid and 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 Environment and Waters Management. 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 Environment and Waters Management). A new directorate responsible for public relations was set up within the Ministry of Environment and Waters Management. Concerning the awareness there are organized periodically meetings between representatives of administrative sector with representatives of trade unions, business affaire sector.

C. 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: 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.

A. Basic Sanitation: The Institute of Public Health Bucharest presents for MHF, annually or at other specified intervals, synthesis amongst which are the following:

- Drinking water supply for population
 - Water-born diseases evaluation
 - Evaluation of dwell water generated infantile methemoglobinemia cases
 - Situation of natural water quality, used for bath or leisure purposes
 - Situation of domestic waste collection, removal and neutralization
 - Air quality in residential areas in main urban localities
 - Situation of atmospheric air related indicators of health status of population
 - Noise levels in county capitals.
1. 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.
 2. 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.
 3. Institute of Public Health Timisoara produces the following synthesis: Evaluation of nutritive quality and microbiological contamination of meat and meat products.

B. Solid and Hazardous Wastes: A new directorate responsible for public relations was set up within the Ministry of Environment and Waters Management.

C. Radioactive Wastes: Issue is not applicable.

Research and 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.

A. Basic Sanitation: Research on improving the cleaning efficiency in the wastewater treatment plants is carried out.

B. Solid and Hazardous Wastes: The National Research-Development Institute for Environment Protection (ICIM –Bucharest) deals with the research programme for environmental protection including the management of waste.

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.

C. 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:

A. Basic Sanitation: *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.

B. Solid 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 Environment and Waters Management.

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.

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

D. Radioactive Wastes: The financing of the National Commission for Nuclear Activities Control is entirely ensured, According to Law no.111/1996 with subsequent modifications and completions, through extra budgetary resources from tariffs for authorization and financial contribution of international organizations.

Law no 320/2003 stipulates that the financing of the National Radioactive Waste Agency will be ensured from financial contributions of license holder, established by Governmental Decision; financial assistance, donation, sponsorship from legal and natural persons and international organizations, other sources approved by the Government.

Cooperation:

A. Basic Sanitation: Denmark provides technical assistance investments for: wastewater treatment; water supply, air quality and waste management.

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

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

D. 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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