

## SANITATION COUNTRY PROFILE

### LITHUANIA

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**Decision-Making:** A National Council for Sustainable Development of the Republic of Lithuania has been approved by the Government in 2000. Several governmental bodies and research institutes as well as various NGOs are represented. It is headed by the Prime Minister of the Republic of Lithuania. The main institutions responsible for integrating environment and development in the Country are national ministries and the local authorities. The main principles of environmental legislation are fixed in the Constitution of the Republic of Lithuania and in the Law on Environmental Protection. Further environmental principles and integration of environmental requirements into other activities are embodied in the Laws on Taxes for the State Natural Resources and Taxes for the Pollution of the Environment as well as in the Law on Environmental Impact Assessment. EIA is foreseen in the Law on Environmental Protection, in the Law on Protected Areas, the Law on Construction, in the Law on Territorial Planning and other laws and legal documents, such as the Waste Management Law, Law Hazardous Materials and Products, Law on Radiation Protection, Law on Management of Radioactive Waste, Law on Nuclear Energy, Fauna Law, Flora Law, Law on Protected Fauna, Flora and Mushroom Species and Communities, etc. Lithuania's first Environmental Protection Programme was developed in 1992. A new programme was developed within the framework of the Lithuanian Environmental Strategy, adopted by the Parliament in 1996. The effective implementation of this Strategy Action Programme requires good coordination and feed-back between all involved state, municipal and non-governmental organizations.

A. Basic Sanitation: The food safety sector. The Ministry of Health and the National Nutrition Center (as an acting institution) are responsible for scientifically based risk assessment, the EU acquis transposition into the national law and establishing mandatory requirements for food safety in the following areas: maximum permitted levels of contaminants in food and drinking water, safety requirements for food additives and food supplements, the safety of foodstuffs for particular nutritional purposes, irradiated, novel and genetically modified food, articles, intended to come in contact with food, labelling, requirements for food hygiene and control, the rules for introduction of Hazard Analysis and Critical Control Points system (HACCP) at the food handling establishments, requirements for health of persons handling food. The National Nutrition Center develops programmes for food safety and improvement of nutrition of the population, monitor the nutrition of the population, food safety and food-borne diseases, promote habits of wholesome nutrition. The State Food and Veterinary Service is an official food control authority implementing the legal provisions established by the Minister of Health. The Ministry of Environment is responsible for the implementation of the Programme of Action; the main objectives include among others reduction of surface water pollution from municipal and smaller settlements waste waters. Waste water treatment systems are mostly under the authority of municipalities.

B. Solid Wastes: The Ministry of Environment is responsible for the development of legal acts regulating non-hazardous waste management. The Ministry of Economy shall develop and implement the National Waste Management Programme designated to promote the prevention of waste production, recovery of waste, development of the market for products manufactured from recovered waste. Municipal wastes are managed by local municipal institutions. National Strategic Waste Management Plan shall be prepared and submitted to the Government for approval up to 31st of December, 2001. Counties Waste Management Plans and Municipal Waste Management Plans shall be prepared as well. Waste management plans shall include separate parts dealing with hazardous waste, packaging waste and biodegradable or separate plans for management of the mentioned waste sorts shall be prepared. Legislation in this area includes Law on Environmental Protection, Article 23, Law on Waste Management of the Republic of Lithuania, Waste Management Regulations, Rules for Setting up, Operation, Closure and After-care of Landfills of Waste and others.

C. Hazardous Wastes: The Ministry of Economy shall organize the management of hazardous waste. The Ministry of Environment shall organize the development of legal acts regulating waste management and shall control the compliance with the established requirements. The Government of the Republic of

Lithuania approved the National Hazardous Waste Management Programme and Its Implementation Measures in 1999. See under Solid Wastes. While developing and implementing hazardous hospital waste management policy, The Minister of Health Care had issued the Hygiene Norm HN 66:2000 on Hospital Waste Management (on May 3, 2000) which defined requirements for hospital waste management and obliged to manage hospital waste in unified way. In August 4, 2000, the director of the Pharmaceuticals Department under the Ministry of Health Care has issued the order on rules for pharmaceutical waste management regulating their classification, collection, sorting, packing, labelling, storage and transportation as well as control of management. Recently, the Minister of Health Care has passed the order on adoption of the form for annual information on hospital waste management (December, 30, 2003) and the order on methodological guidelines for hospital waste management in health care institutions (February, 6, 2004).

D. Radioactive Wastes: *Regulatory functions are split between several governmental institutions*: Ministry of Environment, Ministry of Health Care, Radiation Protection Centre and State Nuclear Power Safety Inspectorate. The Ministry of Economy is the founder of the State Enterprise Ignalina NPP (the operator of the Ignalina nuclear power plant) and the State Enterprise Radioactive Waste Management Agency (RATA), the operator for the radioactive waste management. RATA was established in 2001 with the main function to manage all radioactive waste, assigned to it, ensuring radiation and nuclear safety. Lithuania has ratified the Nuclear Safety Convention (1996) and the Joint Convention on the Safety of Spent Nuclear Fuel and the Safety of Radioactive Waste Management (2003). The Law on the Management of Radioactive Waste and Law on Radiation Protection were adopted in 1999. The Radioactive Waste Management Strategy was adopted by the Government in 2002. In addition, there are other regulatory documents: Hygiene Standards Basic Radiation Protection Standards (1997, amended in 2001), Management of Radioactive Waste (2001), Regulations for Licensing Practices with Sources of Ionizing Radiation (1999, amended in 2004), Regulations for Licensing of Nuclear Power Related Activities (1998), General Requirements for Dry Type Storage of Spent Nuclear Fuel (1999), Ignalina Nuclear Power Plant Decommissioning Requirements (1999), Order on Import, Export, Transit and Transport within the Country of Radioactive Substances and Radioactive Waste and returning of Spent Sealed Sources (1999), Clearance Levels of Radionuclides and Conditions of Reuse of Materials and Disposal of Waste (2000), Regulation on Predisposal Management of Radioactive Waste at Nuclear Power Plant (2001), Regulation on Disposal of Low and Intermediate Short-Lived Radioactive Waste (2002), Regulation on Disposal of Very Low Level Radioactive Waste (2003), Generic Waste Acceptance Criteria for Near Surface Disposal (2003), Order on Limitation of Radioactive Discharges from Nuclear Facilities, Permitting of Discharges and Radiological Monitoring (2001), Order on Limitation of Radioactive Discharges from Medical, Industrial, Agriculture and Scientific Research Facilities, Permitting of Discharges and Radiological Monitoring (2001).

### **Programmes and Projects:**

A. Basic Sanitation: According to the National programme for adoption of Aquis, Lithuania will transpose all the EU requirements in water sector until the year 2002. These requirements will be fulfilled by the year 2004 with the exception of urban wastewater treatment directive, which will be implemented by the year 2010. Tertiary waste water treatment plants will be built in forty-seven Lithuanian cities and towns (tertiary treatment exists in eighteen cities and towns already).

B. Solid and Hazardous Wastes: The Government of the Republic of Lithuania approved Outline National Waste Management Strategy and Action Programme in 1999. In the period 1997-2000 Lithuania's Waste and IPPC Approximation Project was carried out. National Strategic Waste Management Plan is being prepared. Projects for ISPA 2002: Vilnius regional waste management system development (Establishment of waste management system in Vilnius region, Construction of regional landfill, closure of old landfill); Klaipeda regional waste management system development (Establishment of waste management system in Klaipeda region, Construction of regional landfill, closure of old landfill); Marijampole regional waste management system development (Establishment of waste management system in Marijampole region, Construction of regional landfill, closure of old landfill). These projects are being prepared. To address the

major problem of household waste management, the Programme for Utilization of Secondary Raw Material and Waste has been developed and is under implementation. The key goal of the said programme is creation of a modern system for sorting household waste that would be in line with requirements of the EU as well as development of repeated utilization and recycling of secondary raw material. Recently realization of projects on collection of landfill gas and its utilization to generate electrical power has been started. This task was undertaken by the joint Lithuanian-Danish-Finnish-Swedish venture CC Baltic Consultation Group (BCG). In Lithuania, landfill gas is being already collected in the Kariotiškes landfill, where the gas is burnt, Vilnius city landfill. Collected gas will be used to make electrical power. This will be the first installation for gas processing into electrical power in Lithuania. Deadline for completion of works is set for the autumn of the next year (2002).

C. Hazardous Wastes: The Ministry of Economy has developed the Public Hazardous Waste Management Programme started to implement since 1993. The Government approved National Hazardous Waste Management Programme and Measures of its Implementation in 1999. Implementation measures provided for by the programme envisage elaboration of the regional hazardous waste management and development of hazardous waste disposal systems and creation of specific hazardous waste (medical, leather processing industrial, polluted with oil products and other kind of waste) management systems. According to the National Hazardous Waste Management Programme and Measures of its Implementation as well as the National Environmental Health Action (2003 – 2006) Programme the programme for hospital waste management is under development now. In the process of realization of the measures set forth in the programme, regional hazardous waste management sites have been started to build and specialized waste management enterprises have been established on their grounds. The said enterprises will co-ordinate hazardous waste management in the areas attributed to their sphere of regulation and will provide services of hazardous waste transportation, storage, rendering harmless and other kind of management.

D. Radioactive Wastes: The Strategy on Radioactive Waste Management was prepared and it was adopted by the Government in 2002. Implementing the provisions of the Strategy, the Program of Assessment of Possibilities of the Disposal of Spent Nuclear Fuel and Long-Lived Radioactive Waste for the Years 2003-2007 was prepared and approved by RATA (2003). Further actions have been taken in improvement of radioactive waste management infrastructure and management: in 2000-2001 the Radiation Protection Centre took part in the EU Project „Management of Spent Sealed Radiation Sources in Bulgaria, Latvia, Lithuania, Romania and Slovakia”. Information was collected on management of spent sealed radiation sources in Lithuania and submitted to the EC. Based on this information and on information submitted from other countries, the Report was issued by the EC (2002). The PHARE Project on Modernization of Facility for Handling of Radioactive Waste from Small Users was approved by EC (2003). Also the PHARE Project on Safety Assessment and Upgrading of the Maisiagala Repository in Lithuania is under implementation. Both projects are implemented by RATA. Several bilateral projects (in form of workshops, study visits, expert missions etc.) with support from Sweden in the field of radioactive waste management with the aim to improve the radioactive waste infrastructure were implemented during 2001-2003.

*Radioactive waste and spent fuel management*: Both the wet and dry spent fuel storage concepts were considered. The proposal of GNB Company (Germany) was chosen based on outdoor storage in dual-purpose (transport and storage) metal or concrete casks. The casks meet safety requirements for storage and transportation. After cooling in the storage pools for at least 5 years the spent fuel is loaded into CASTOR or CONSTOR casks and disposed and it is stored in the interim storage site for 50 years. Due to limited capacity of the interim storage facility, in addition, within the project Expanding of Spent Fuel Interim Storage facility (2001-2005), a project for new interim dry type storage facility will be approved soon. In 2003, the Government approved the project for construction of Cement Solidification Facility (2001-2003), Within the framework of projects on reorganization of Long Lived Solid Radioactive Waste Management (2001-2004), reorganization of Short Lived Solid Radioactive Waste Management (2001-2004), the project on construction of facility for treatment and conditioning of solid radioactive waste was approved by the

Government (2004). Within the project on construction of Low and Intermediate Short- Lived Radioactive Waste Repository, the initial planning has been performed (2002), few best suitable sites for the repository have been identified (2003). As regards the activities in disposal of very low level radioactive waste, the project on disposal of such type of waste in Landfill repository was under development (2002-2003). The Environmental Strategy for Ignalina NPP region was developed.

**Status:** *Socio-economic aspects:* The unemployment rate in Lithuania increased during the past few years, and this has led to a substantial reduction in standard of living in some sectors of society. Access to primary health care, clean water and sanitation, and primary education is rather sufficient with some exceptions. For the last five years demographic changes in Lithuania have violated long-term trends. For the first time after post-war period the population started to decrease: total population of Lithuania in 1995 - 3717.7 thous, in 2000 - 3698.5 thous, in 2001 - 3692.6 thous, in 2002 – 3469.1 thous. The population distribution is decreasing in the towns and increasing in the rural areas. Most of the families in Lithuania have one or two children. For the few last years, the fertility indicators decreased among women in all fertility groups. Economic difficulties, housing problems and unemployment are the main reasons for this decrease in births. Unemployment rate in the beginning of 2001 in Lithuania was 13.2 %. Life expectancy at birth is slightly increasing in Lithuania: in 1995 - 71.49 (Males - 63.53, Females - 75.15), in 2000 - 72.87 (Males - 67.62, Females - 77.93), 2002 – 71.91 (males – 66.21, females – 77.58).

Indicators	Figures
Life expectancy at birth (2002)	71.91
Number of live births per 1000 population (2002)	8.6
Total fertility rate (TFR), number of children per woman(2002)	1.24
Maternal mortality rate, per 100 000 live births (MMR) (2002)	20.4
Under-five mortality rate, per 1000 live births (UFMR) (2002)	10.4
Infant mortality rate per 1000 live births (IMR) (2002)	7.86
DPT3 immunization (%)	94.8
Standard death rate (SDR), per 100 000 population (2002)	1183.9
Viral hepatitis per 100 000 population (2002)	12.4
Tuberculosis incidence per 100 000 population, all forms (2002)	60.5
Syphilis incidence per 100 000 population (2002)	15.5
AIDS incidence per 100 000 population (2002)	0.3
Human development index (HDI)	0.789
Percent of regular daily smokers age 15+ years, men/women (2001)	51,5 % / 15,8 %

The Lithuanian agriculture employs 18.7 % of the employed; they create 8 % of the GDP per year. About 50 % of the employed of the country are related to agriculture: employees of processing enterprises, construction, trade, transport and other service sector, therefore the Lithuanian agriculture is fully integrated into the economic and social life of the country. When implementing the historical justice that was trampled in the years of occupation, ownership rights to land have been restituted to 80 % of the former landowners. Annual exports of the agricultural production makes almost 0.5 billion US\$ and is directed to the European Union (35 %), the CIS countries (26 %) and the Baltic States (19 %). The quality of Lithuanian food products has received recognition all around the world as the majority of farmers' apply environmentally friendly principles in the farming activities.

Tourism is one of the most important sectors of the Lithuanian economy, and its further development is encouraged. Exports of tourism services form 14 % of total exports of Lithuanian goods and services. The

total contribution to GDP in 2000 from expenditure by foreign visitors was 5 %. The revenue from international tourism is expected to be more than US\$ 600 million.

*Land:* The forest management has always been under strict professional control therefore annual felling has never exceeded the sustainable limits of the allowable annual cut. Over the recent years the felling accounts about 5 million m<sup>3</sup> annually. According to experts the potential annual cut of 6.2 million m<sup>3</sup> could be maintained for coming ten years. Forestry and forest industries play important role in Lithuania's economy. During recent years value added in forest and timber industry sector was increasing steadily, annually contributing 2.6-3.0 % of gross domestic product in Lithuania.

Lithuania is the most southern of the three Baltic States, bordering Latvia to the north (610 km long border), Belarus to the east and south (720 km), Poland (110 km) and the Kaliningrad region of the Russian Federation (303 km) to the south - west. The Lithuanian coastline is 99 km long. With a surface area of 65 301 km<sup>2</sup>, Lithuania is the largest of the three Baltic countries. The country forms part of the great North European Plain and the landscape alternates between hilly areas and flat plains. Forests cover 30 % of the territory. The forest cover has increased over the past 50 years, from 21.8 % in 1937 to about 30 % in 1997. However, it is lower than in Latvia (41.7 %), Estonia (39.2 %) or Belarus (34.6 %). Agriculture uses 54 % of the land, two thirds is arable. Bogs and marshlands now cover 7 % of its territory. Most are in the west, the south and the east. Some 77 % of wetlands have been drained for agricultural purposes. Over the last few decades the intensification of large-scale agriculture, cutting of forests and draining of bogs have contributed to erosion and loss of soil productivity. At present, about 15 % of the country's farmland is severely eroded. Soil quality varies considerably. Good quality agricultural soil is found on only 34 % of the agricultural area. The measures taken to combat soil erosion such as reducing crop cultivation on eroded areas, sowing perennial grasses on fragile soils and planting trees on the steeper slopes are not sufficient to solve the problem. Three main regions can be identified by soil productivity: the lowlands in central Lithuania have the most productive soils, followed by the low, deeply washed carbonate soils in west Lithuania. The wooded moraine hills and interspersed sandy plains in east Lithuania have a relatively low agricultural productivity. The most characteristic soils are turfy podzolic loam and gley. The Karst Zone (Biržai and Pasvalys districts, Northern Lithuania), one of the most environmentally vulnerable areas of Lithuania, is known for both its water pollution and soil erosion problems. There is elaborated short reference list on land degradation issues, i.e. Soil erosion (wind, water) is detected mainly due to: loss of forests/vegetation, coastal erosion, aridity, inappropriate land use. Loss of Soil Fertility is detected mainly due to water logging and pollution/contamination of the soil (in some areas of the country).

A. Basic Sanitation: Amount of pollutants discharged to the surface waters from point sources has been reduced significantly since 1992: BOD - 80 %, suspended solids - 80 %, N - 65 %, P - 55 %. The usage of fertilizers and pollution from agriculture has been also reduced considerably. With the reduction of pollution loads, water quality in rivers and lakes has improved but these changes are not as dramatic as reduction of pollution load. The main problems remain to be pollution by nutrients and eutrophication. Nevertheless all Lithuania's rivers are of "salmonid" or "cyprinid" quality. Improvements are needed for water treatment infrastructures (need of modernization, reconstruction and extension). It is serious burden on the budgets of local municipalities. The primary sources of land-based pollution of the marine environment are industry, agriculture and transport that load waste from the coastal areas to the marine basins.

B. Solid Wastes: Household waste management is a problem of today. The main point here is that a large portion of secondary raw material, which could be recycled, if the system of secondary raw material collection and recycling were in place, are brought to household waste landfills in Lithuania. According to the data from 2000 from the Ministry of Environment, 3,022 mil tones of non-hazardous waste were accepted to the waste management enterprises. There are about 680 small municipal waste landfills/dumping sites with an area below 1 ha, about 120 medium-size landfills with an area of 1 to 5 ha

and 35 large landfills in Lithuania. Waste is currently disposed in more than 300 landfills. 1084 thousand tones of municipal waste were delivered to landfills in 2000. Some part of old lead accumulators was exported from Lithuania. Domestic waste dumping system exists, but needs improvement and modernization. The pulp and paper industry recycles waste paper.

C. Hazardous Wastes: One of the most topical environmental problems in Lithuania, like in most East European countries, is hazardous waste management. Every year about 120 thousand tons of such waste that may cause harm to the human surroundings and environment are generated in Lithuania. According to the data from 2000 from the Ministry of Environment there were 160 thousand tones of hazardous waste accepted to the waste management enterprises. Most hazardous waste was generated in industry. There is no waste incineration plant in Lithuania. There was recycled 48 % of hazardous waste in 2000, 49 % of hazardous waste (most oil waste) was stored in 2000. There is enterprise which recycles luminescent bulbs in Lithuania and parts of these bulbs were exported to Latvia.

D. Radioactive Wastes: Nuclear facilities, hospitals, research and industrial facilities are producers of radioactive waste in Lithuania. Radioactive waste is stored in two sites. One repository for radioactive waste was built in the 1960s according to a concept typically applied in the former Soviet Union at that time. Radioactive waste from research, medicine, industry and military installations in Lithuania and Kaliningrad district (Russian Federation) was deposited there from 1963 to 1988, when the facility was closed. After long-term safety assessment it was concluded, that the existing facility does not provide safe long-term storage of the waste already disposed in the facility. Two alternative concepts for providing a higher safety of long-term disposal of the stored waste are defined, an additional barrier protecting against leakage of water through the facility concept and a retrieval concept. The suitability of these concepts will be investigated within the framework of PHARE Project on Safety Assessment and Upgrading of the Maisiagala Radioactive Waste Repository. Ignalina NPP generates over 99 % of the waste. All the waste is stored in the site of the NPP. According to the old classification, the solid waste was separated into three classes. At collection points the waste is segregated into combustible and non-combustible. Volume of non-combustible waste is about 50 %. From 1997 up to the present time generation of Group 1 waste has stabilized on a level of about 1500 m<sup>3</sup> per year. Generation rate group 2 waste, which has a dose rate between 0.3 and 10 mSv/h is about 300-350 m<sup>3</sup> per year. Since 2002 the new classification system for solid radioactive waste was adopted by the legislation, that is in conformity with western standards. An assessment of the long-term safety of the present status of the storage building at Ignalina NPP for low-level solid waste has been done with Swedish assistance. The assessment showed that the buildings were not suitable for very long storage or as repositories, - the retrieval of waste is needed.

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

A. Basic Sanitation: No information available.

B. Solid Wastes: Baltic Environmental Forum is actively organizing workshops on waste management issues for representatives of environmental authorities of Estonia, Latvia and Lithuania, and publishing Baltic State of the Environment Reports. Investigation of public information/awareness and attitudes on particular waste problems as well as preparedness of citizens to accept and implement modern waste management technologies was carried out in Kaunas, Jonava and Siauliai in 2000.

C. Hazardous Wastes: Workshops, Training courses for environmental protection inspectors are organized annually. Participation at the training course at the Regional Training Center (RTC) for the Implementation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in Bratislava, Slovak Republic has been practiced since 1997. Baltic Environmental Forum is actively organizing workshops on waste management issues for representatives of environmental authorities of Estonia, Latvia and Lithuania, and publishing Baltic State of the Environment Reports.

D. Radioactive Wastes: Seminars and workshops on radioactive waste and spent fuel management were organized *by the regulatory authorities and* with assistance of Swedish Radiation Protection *Authority* in years 1994-2003. A number of specialists from regulatory institutions and operators participated in IAEA *and other* training courses on radioactive waste management and safe transportation of radioactive materials

**Information:** Reports with statistical data are available on the Ministry's Environment computer net. Reports on "Environmental Protection in Lithuania" are published annually.

A. Basic Sanitation: Computer systems are usually used for data collection. The satellite-based remote sensing maps and GIS are used as well. Geographic Information Systems are used for physical planning of territories and development of data bank for territorial planning. Management system of water basins with integration into GIS is under development. The GIS systems and analysis tools are used in high scale in the development of management system of protected areas, register of water bodies, the cadastre of forests, geological survey. A few modeling systems are used for water management.

B. Solid and Hazardous Wastes: Waste recovery, disposal and export enterprises shall annually report on waste management issues to Regional Environmental Protection Departments of the Ministry of Environment. Ministry of the Environment publishes report on the environment issues annually, including issues on waste management. The main information on waste production is collected from enterprises by the established order according to submitted reports. Information for public is available on annual reports and web sites.

C. Radioactive Wastes: Amount of produced radioactive waste is reported annually.

### **Research and Technologies:**

A. Basic Sanitation: In 1993, pilot programme "Tatula" to develop organic agriculture in the Karst region was started. The scope of the Programme is far reaching. It involves design and construction of water cleaning equipment to protect the underground water from the pollution, application of other environmentally sound measures to improve the agro-environmental situation and proceeds with environmental monitoring in the region. Furthermore, in the framework of "Tatula" programme consulting services are delivered.

The principles of "best available technology" and "best available practice" are under implementation in Lithuania. Water pollution has been reduced substantially both by improvements in processing techniques and by cleaning emissions. In 1997, the Ministries of Environment of Lithuania and Norway signed the Protocol on the cleaner production training programme in Lithuania for 1997-2000. The main effort in this Programme was focused on training of the Lithuanian enterprises and experts. Around sixty industrial enterprises and organizations have participated in the training course and around 100 local experts have been trained. Projects to transfer EST's include the following: a Danish project on Implementation of Demonstration Projects in Cleaner Technology in the Lithuanian Galvanic Industry; a PHARE project on Strengthening Water Utilities Management; a Norwegian project on Capacity Building Programme in Cleaner Production in Industry in the Baltic Region; and a Danish EPA project on Environmental Efficiency in the Lithuanian Food Processing Industry. The Project involved environmental auditing in seven companies from different food industry sectors of Lithuania. (See also under Solid Wastes).

B. Solid Wastes: There are some modernization projects going on in Lithuania, e.g. on Kaunas landfill where a monitoring system was already established in 1994. Sludge is disposed in a special landfill. The technique appears to be very expensive, and it is therefore important to reduce volumes of sludge by introducing best available techniques.



C. Hazardous Wastes: Measures for reduction of hazardous waste accumulation include improvement of technological processes in enterprises and introduction of low waste technologies.

D. Radioactive Wastes: Investigations of suitability of geological formations in Lithuania for disposal of high-level radioactive waste are performed. Experience in safety and environmental impact assessment has been built.

### **Financing:**

A. Basic Sanitation: Over 250 millions US\$ have been invested into the wastewater treatment in Lithuania since 1990. This, together with the industry decrease, brought impressive results. In 1997 and 1999, some 60 US\$ million from public sources were invested in the environmental field, in particular water treatment facilities. The total allocation for environmental protection to be made from various sources in 2000 amounts to about 100 US\$ million. A National Environmental Financing Strategy provides for investment projects up to the year 2015. To enable Lithuania to fulfill the EU environmental requirements, yearly allocations totaling US\$ 50-60 million for investment projects in the water and waste sectors will have to be made. The biggest part of investment will be earmarked for the construction of drinking water and wastewater treatment facilities, to build distribution and collection networks and the implementation of waste management projects. Construction of wastewater treatment plants is subsidized from the national budget. During the last 10 years period more than US\$ 250 million for the reconstruction and construction of wastewater treatment plants were allocated. As a contracting organization, the 'Tatula' fund finances the construction of waste-water treatment plants and other environmental facilities. (See also under Solid and Hazardous Wastes).

B. Solid and Hazardous Wastes: In order to provide incentives for waste and pollution minimization and to accumulate additional funds, the Environmental Investment Fund was established. Economic instruments encompass taxes on state natural resources; pollution charges; user charges; tax waivers; tax differentiation; subsidies, loans and funds. Construction and equipment of regional waste management sites are financed from the state and municipal budgetary funds. Ways and possibilities for attracting foreign investment are sought for. For waste management are being used: The central government budget and municipal budgets; The municipal funds for the protection of nature; 20 % of the Fund for the Support of SMEs to credit the business of utilization of recoverable waste; Funds of foreign countries, international organizations and financial institutions as well as targeted contributions of natural and legal persons of the Republic of Lithuania. For implementation of projects of regional waste management system will be used: 50 % the ISPA Fund; 20 % Lithuania funds (state and municipal budgets, money of private persons, etc.); 30 % State-guaranteed loan.

The sites of Šiauliai and Klaipėda - two regions most heavily polluted with hazardous waste - are in the final stage of their equipping in the current year upon assigning funds under the PHARE Cross-border Co-operation Programme. The Danish Environmental Protection Agency allocated about 6 million DKK (about 3 million LTL) for collection of landfill gas, which will be used to make electrical power. Contribution of the Vilnius Municipality would make about 0,5 million LTL. Plans are made to provide budgetary allocations to enterprises involved in waste and secondary raw material processing. A draft law on substitution of the Law on Tax on Pollution will be considered at the Parliament during its autumn session in 2001. The draft provides for imposing taxes on products, usage of which causes waste generation. It is noteworthy, that upon adoption of the said law, funds will be accumulated to finance waste managing enterprises and induce waste prevention. Great importance will be attached to introduction of cleaner production technologies and their development.

C. Radioactive Wastes: The cost of radioactive waste management and disposal is the responsibility of radioactive waste producers. The Program on Decommissioning of Unit 1 of Ignalina Nuclear Power Plant has been developed and approved by the Government of Lithuania (2001, amended yearly).

Decommissioning policy and financial aspects have been discussed at Donor Conference organized by the Lithuanian Government with support of the European Commission in Vilnius on 20-21 June 2000. International donors pledged during the conference to collect about 216 mln. EUR needed to close the first Unit of Ignalina Nuclear Power Plant.

**Cooperation:**

A. Basic Sanitation: International cooperation takes place in the context of the International Programme on Chemical Safety (IPCS), the Intergovernmental Forum on Chemical Safety (IFCS); the International Register of Potentially Toxic Chemicals (UNEP/IRPTC); and the National Chemical Inspectorate, Sweden. Lithuania has acceded to the Convention on International Civil Aviation, the Convention on the International Marine Organization, the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) and the Agreement on International Railway Transport (COTIF).

B. Solid Wastes: A lot of different programmes and projects for capacity building related to improving the collection, assessment, management, and dissemination of information have been implemented in Lithuania using foreign subsidies. The projects include: "Technical assistance for the development of an information system on waste management in Lithuania".

C. Hazardous Wastes: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was ratified at the end of 1998 and entered into force for Lithuania on July, 1999.

D. Radioactive Wastes: In 1996, the Ministry *of Energy* and the Ministry of Environmental Protection signed agreements with the Swedish Nuclear Fuel and Waste Management Company for the period 1996-1997 on the radioactive wastes management plan in Lithuania which is aimed at long-term safety assessment of existing radioactive wastes storage and their safe operation. It was successfully implemented in 1996-1997. Bilateral co-operation projects with Sweden (since 1994), technical co-operation projects with IAEA are actively implemented (for example, National Project Support for Decommissioning at Ignalina NPP Unit 1 (started in 2000)).

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