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**DEVELOPMENTS IN IMPROVING ENVIRONMENTAL OBSERVATIONS, DATA
COLLECTION AND REPORTING**

**IMPLEMENTATION OF RECOMMENDATIONS ON MONITORING AND
INFORMATION MANAGEMENT FROM COUNTRY ENVIRONMENTAL
PERFORMANCE REVIEWS**

BELARUS

Note by the secretariat¹

Summary

The paper presents the recommendations on environmental monitoring and information management that the Committee on Environmental Policy approved at its thirteenth session on 10 October 2005, and describes the situation in Belarus with environmental monitoring and information management by that time.

The Working Group is expected to consider progress made by Belarus in the implementation of these recommendations and to provide the country delegation with possible guidance on how to improve performance to this end.

¹ Prepared on the basis of materials of the Second Environmental Performance Review of Belarus (ECE/CEP/129).

RECOMMENDATIONS TO BELARUS OF THE SECOND ENVIRONMENTAL PERFORMANCE REVIEW

Recommendation 1

The Ministry of Natural Resources and Environmental Protection should:

- (a) Transform its local monitoring programme, step by step, into a full-fledged national PRTR which, among other things, should cover releases and transfers of the main pollutants from major point sources, accommodate available data on releases from diffuse sources (e.g. transport and agriculture), present standardized, timely data on a structured, computerized database, and be publicly accessible through the Internet, free of charge;*
- (b) In cooperation with the Committee on Land, Geodesy and Cartography under the Council of Ministers and within the framework of the National System of Environmental Monitoring, take the necessary measures to establish and develop land monitoring; and*
- (c) Speed up the accession of Belarus to the PRTR Protocol to the Aarhus Convention.*

Recommendation 2

The Ministry of Health, jointly with the Ministry of Natural Resources and Environmental Protection, should review the national ambient environmental quality standards to:

- (a) Make the standards consistent, to the maximum extent possible, with international air- and water-quality standards and monitoring guidelines, and set time schedules to phase in monitoring of the standards that are currently not measured, as well as the revised or new standards that cannot be introduced immediately;*
- (b) Upgrade monitoring stations, equipment and devices, and analytical laboratories, and retrain staff to measure environmental quality against the revised list of standards.*

Recommendation 3

(a) The Council of Ministers should streamline the natural resource cadastres to oblige the responsible ministries and institutions that have not done so yet to establish databases that:

- Present standardized, timely and computerized data;*
- Are searchable according to key parameters;*
- Are user-friendly in their structure and provide links to other relevant databases;*
- Are publicly accessible through the Internet, free of charge; and*
- Have only limited confidentiality provisions.*

(b) The Ministry of Natural Resources and Environmental Protection, jointly with the Ministry of Statistics and Analysis, should update the national system of environmental indicators to make it consistent with indicators used in Europe and worldwide, and to facilitate international comparisons.

I. ENVIRONMENTAL MONITORING

In Belarus, there are 13 types of environmental or environment-related monitoring, 11 of which are combined in the National System of Environmental Monitoring (NSEM).

A. Atmospheric air monitoring

Ambient air quality is monitored in 16 Belarusian cities, which are home to some 65% of the urban population. In addition, there is a transboundary air-monitoring station in Vysokoye on the western border of Belarus and an integrated background monitoring station in the Berezinsky Biosphere Reserve. The number of air-monitoring stations of the Ministry of Natural Resources and Environmental Protection increased from 49 to 53 between 1996 and 2004. It also has few mobile laboratories to measure air quality in areas close to polluting enterprises and major roads as well as in recreation areas. The Ministry of Health has one permanent monitoring station in the city of Mogilev.

The current ambient air-monitoring network remains insufficient, however. To meet the requirements of national regulations there should be 15 stations instead of the current 11 stations in Minsk and 5 (instead of 4) in Gomel. Furthermore, there should be at least one monitoring station each in Baranovichi, Borisov, Lida and Zhlobin. Six mobile laboratories will have to be purchased to cover urban areas and resorts that are currently not covered. However, with one such lab costing at least US\$ 60,000 it cannot afford to do so. The authorities are considering establishing three more transboundary stations to participate in EMEP under the UNECE Convention on Long-range Transboundary Air Pollution. These would be located in the city of Mstislavl' near the border with the Russian Federation, Lelchitsy near the border with Ukraine and Braslav near the borders with Latvia and Lithuania.

The number of parameters measured varies from 6 to 32 in individual cities, with the biggest number measured in Mogilev. The parameters for each city (except Novogrudok) cover the concentrations of, at least, total suspended particulates, sulphur dioxide, carbon monoxide, nitrogen dioxides, formaldehyde, lead and cadmium. Samples are taken three or four times a day (except on Sundays and official holidays). Following the findings in the 2002 World Bank study there are efforts under way to start measuring concentrations of particulate matter (PM₁₀ and PM_{2.5}) and ground-level ozone in ambient air.

In early 2005 there was only one automatic station in the country (in Mogilev). Only 12 of all permanent stations in the country met the national standards for measurements of average daily concentrations of pollutants in ambient air. Measurement results are compared with the maximum allowable concentrations (MAC) (24-hour average and/or 20-minute limits). Contrary to WHO and EU air-quality criteria, there are no annual or hourly limit values in Belarus. It is, therefore, nearly impossible to compare Belarusian and international air-quality standards. Table 3.1 lists some Belarusian standards. To adopt international standards Belarus would have to ensure the continuous measurements of air quality, which only automatic stations can do.

Air-quality reports use an air pollution index for each monitoring station and city monitored. The index compares mean annual concentrations with a pollutant's limit value. In 2003 the aggregated air pollution index for five parameters (total suspended particulates, sulphur dioxide, carbon monoxide, nitrogen dioxides and formaldehyde) was highest in Gomel and Rechitsa, while in Grodno, Novopolotsk, Polotsk, Svetlogorsk and Vitebsk it was only slightly above "normal". In 2003 some 46% of the urban population covered by regular air quality monitoring were occasionally exposed to high concentrations of pollutants in ambient air.

Two monitoring stations in Minsk measure the total concentration of ozone in the atmosphere, the vertical ozone distribution and the biologically active UV radiation.

B. Water monitoring

NCRCEM monitors surface water quality at 134 observation points, 203 gauges in 70 rivers, 14 lakes, 10 reservoirs and 1 canal in the basins of the rivers Zapadnaya Dvina, Neman, Zapadnyi Bug, Dnepr and Pripjat. Most observation points are near large urban areas and industries with a significant adverse impact on the water environment. Since 2003 water sampling and analysis has started at 11 transboundary gauges. Since 1 April 2004 water quality has been monitored at 35 observation points on transboundary rivers.

There is no monitoring of diffuse pollution of surface waters. The geographical distribution of observation points is biased towards big rivers. There are few observation points on lakes and small

ivers. To adopt a modern approach to surface water monitoring, Belarus would have to set up at least 15 background monitoring stations (i.e. 10% of the overall water-monitoring network).

Some 50 parameters are used to assess water quality, including chemical composition, suspended and organic matters, biogenic parameters, main pollutants, heavy metals and pesticides. Samples are taken 4 to 12 times a year. There is no automatic monitoring station to ensure continuous water-quality monitoring in Belarus.

Hydrochemical measurements are supplemented by hydrobiological observations to provide an integrated assessment of the state of water ecosystems. These observations are made at 95 stationary points and 138 gauges in 74 water bodies. Four parameters are measured: phytoplankton, phytoperiphyton, zooplankton and zoobentos. The frequency of these observations has been generally reduced from 7 to 3 times a year owing to resource constraints. Water quality is measured against the established maximum allowable concentrations of pollutants. The Belarusian limit values are generally more stringent than the international ones.

Nitrites, ammonium, metals, phenols, and oil products are the most widespread pollutants of surface waters.

Surface water quality reports use a water pollution index for chemical quality and three indices for biological quality. For chemical quality the index is based on six parameters – dissolved oxygen, BOD-5, ammonia, nitrite, oil products and zinc. According to the water pollution index, 41% of surface waters were classified as relatively clean, 58.4% as moderately polluted and 0.6% as extremely dirty in 2003. The most polluted river stretches were Uza down from Gomel, Pripyat down from Pinsk, and Svisloch down from Minsk and near the Svisloch settlement.

Groundwater is monitored at background stations, water intake points and in some aquifers. From 1999 to 2004 the total number of permanent observation points decreased from 141 to 101 and of permanent groundwater wells from 1,656 to 1,093, owing to financial difficulties of the Geology Department of the Ministry of Natural Resources and Environmental Protection. Optimization of groundwater monitoring under resource constraints may include dispersion of the observation points, where appropriate, and the discontinuation of monitoring in well protected aquifers.

Samples are taken one to four times per year depending on groundwater conditions in wells. The samples are analysed according to 26-56 parameters, including the content of principal ions, iron, manganese, nitrogen compounds, dissolved organic substances, heavy metals and pesticides. Groundwater represents 93% of total drinking water supply in Belarus and its quality generally meets drinking-water standards. Groundwater quality is compromised in some areas due to leaching from landfills, pesticide disposal sites, manure storage sites and abandoned military bases. At present, nitrate concentration in water in 70% of groundwater wells exceeds the limit value. The Soligorsk Potassium Combinat is the biggest threat to aquifers in the area.

C. Land monitoring

There is no comprehensive observation network for land monitoring. Soil quality is monitored at separate test sites to investigate changes in soil properties as a result of irrigation, erosion, the use of mineral and organic fertilizer and other agricultural inputs. Oblast engineering and research stations conduct five-yearly agrochemical surveys to track the use of chemicals in agriculture. According to soil observations, 491,200 ha of agricultural land are eroded. Furthermore, 1.4 million ha of land are vulnerable to water erosion and 3.4 million ha are vulnerable to soil degradation.

Soil contamination is monitored around large industrial sites and near major highways in 45 cities. Nine pollutants are monitored and results reveal that in a number of urban areas the soil is contaminated with cadmium, lead, zinc and oil products. 100 reference stations in all six oblasts study overall background soil contamination. Residue of 17 pesticides in soil is also monitored on 4,000 ha of agricultural land in 29 districts.

D. Radiation monitoring

Radioactive contamination of the atmosphere is monitored by means of daily measurements of gamma-radiation exposure (GRE) doses at 56 stations, radioactive fallout from the atmosphere at 30 stations and radioactive aerosol content in the air in 6 cities. GRE is measured at automated stations in the areas close to the Chernobyl (Ukraine), Ignalin (Lithuania), Rovno (Ukraine) and Smolensk (Russian Federation) nuclear power stations. Radioactive contamination of surface water is monitored monthly on five points on the rivers of Dnepr, Sozh, Pripyat, Iput and Besed to determine their caesium-137, strontium-90 and aggregate beta-activity content. Radiation monitoring of the soil is conducted at 123 reference sites and 18 geochemistry landscape sites to study vertical radionuclide migration in various soil types. There is no timely monitoring of Sr-90, however, owing to a lack of local laboratories.

GRE at all monitoring stations is significantly lower than in 1986 (the year of the Chernobyl accident), owing to natural radionuclide decay. Soil remains contaminated by caesium-137 within the 30-km radius from the Chernobyl nuclear power station (contamination in isolated spots exceeds 37,000 kBq/m²). Contamination is spread unevenly even within individual settlements. For instance, in the Kolybahi settlement in the Gomel oblast contamination varies between 170 and 2,400 kBq/m². In six rayons of the Brest oblast, some settlements in Grodno and Minsk oblasts, and four settlements in Vitebsk oblast caesium-137 content exceeds 37 kBq/m². In total, 23% of the country (more than 6,000 km²) remains contaminated by caesium-137 with its content exceeding 37 kBq/m². 270,000 ha of forests remain heavily contaminated.

Strontium-90 contamination in Belarus is a localized phenomenon. Contamination of over 5.5 kBq/m² has been found over 21,100 km². About 4,000 km² are contaminated with isotopes of plutonium: Pu-238, Pu-239 and Pu-240. Radiation levels in the country's rivers under surface water monitoring have stabilized. Average annual levels of caesium-137 or strontium-90 in river water are below the limit values established for drinking water.

A network of hundreds of laboratories belonging to different governmental agencies is adequately monitoring radionuclides in agricultural and other products.

E. Monitoring of flora and fauna

Wooded land in Belarus is monitored on a regular 16 km x 16 km (90% of total forest area), 8 km x 8 km and partly on a 4 km x 4 km grid. Guidelines of the International Cooperative Programme on Forest under the Convention on Long-range Transboundary Air Pollution and Guidelines of the Food and Agriculture Organization of the United Nations (FAO) are used. The effects of air pollution on the country's forests are monitored around large industrial centres (Minsk, Gomel, Mogilev, Mozyr, Zhlobin, Novopolotsk, etc.). The state of forests and marshes affected by irrigation and drainage works is also monitored. The last forest survey was made in 2003 at 1,450 permanent checkpoints and at 80 permanent test areas. Remote sensing is actively used to supplement ground-level monitoring.

A comparison of forest monitoring data for 1992 and 2003, across the country as a whole and over a cross-section of oblasts, shows a slight deterioration in the condition of standing trees (defoliation), chiefly in Gomel and Minsk oblasts. Defoliation in Belarusian forests is generally worse than in Europe on average; yet the share of dead trees is only 43% of the European average.

The meadow monitoring network includes 33 active and 42 prospective observation sites in various geographical areas. Monitoring of the higher aquatic flora is conducted on seven lakes and six rivers; initial plans called for 50 lakes and 23 rivers to be monitored.

Monitoring of animal life is in its infancy. It focuses on economically valuable animals and threatened species and is carried out at some 50 observation points, including some in the Berezina biosphere reserve, the Belovezhskaya Puchsha and Pripyat national parks, and the Polessye Radiation and Ecology Reserve.

F. Local monitoring

Belarus has been developing a new monitoring system since 2000 to provide information about the pollution load of major pollution sources and their compliance with environmental regulations. The intention is to link this information with ambient environmental quality to establish environmental impact. Initially, 33 enterprises were covered by this so-called local monitoring programme. Most of these were part of the Belneftekhim concern, which included such large plants and conglomerates as Polimir and Naftan (in Novopolotsk), Khimvolokno (Mogilev), Khimvolokno (Svetlogorsk), the Gomel chemical works and the State production agglomeration Azot, with aggregate emissions ranging from 2,000 to 55,400 tons per year. Municipal wastewater treatment plants in Gomel, Grodno, Minsk, Mogilev, Mozyr and Vitebsk, with waste-water flows ranging from 243,000 to 270,430,000 m³ per year, were also included.

In 2003, 80 enterprises reported data on their wastewater discharges. This covered 75 to 88% of all discharges in the basins of the rivers Neman, Zapadnaya Dvina, Zapadnyi Bug and Dnepr. The discharge data were compared with data from the Hydrometeorology Department on water quality in the recipient water bodies upstream and downstream from the discharge points to establish an environmental impact. In 2003, 76 enterprises, representing 53% of total air emissions in Belarus, reported their emission data. Data covered total annual emissions, monthly average and maximum single emission volumes, and were compared with the emission limits. A considerable number of enterprises failed to comply with the established limits.

By 2004, the system covered 156 enterprises, which report data on their air emissions and wastewater discharges into surface waters.

Belarus intends to expand the local monitoring programme and from 2005 also include discharges into aquifers. Further development of this monitoring programme will improve enterprise reporting on emissions and discharges, and the compliance monitoring by analytical laboratories and inspectorates. It may serve as a key pillar of a future national register of pollutant releases and transfers.

H. Health and hygiene monitoring

Health and hygiene monitoring includes observations of air and drinking water quality by institutions of the Ministry of Health. Measurements (except those at a permanent air-monitoring station in Mogilev) are ad hoc. The Ministry of Health also operates analytical laboratories in all oblast centres and the city of Minsk. Average concentrations of dust, sulphur dioxide, carbon monoxide and

nitrogen oxides in cities generally meet health and hygiene standards. In most industrial centres concentrations of formaldehyde are 50 to 200% over the limit, however. Some 3% of samples tap water fail to meet bacteriological standards and some 25% fail to meet chemical standards (mainly with regard to concentrations of iron and nitrates). Piped water quality is below the national standards in Vitebsk, Gomel and Brest oblasts. Some 6.54% of city dwellers and 55.8% of the rural population use well water, but only 78% of wells are properly constructed. As a result, nearly a quarter of drinking-water samples from wells fail to meet bacteriological standards and somewhat less than half falls short of chemical safety standards. Over the past seven years the physical condition of rural drinking-water pipes has deteriorated markedly, leading to increased microbial contamination and a higher incidence of acute intestinal infections and viral hepatitis.

I. Monitoring emergencies

Environmentally hazardous installations and areas that may be affected by natural disasters (flooding, forest fires, peat-bog fires, etc.) and epidemics are under emergency monitoring. This has helped to provide information to decision makers regarding numerous accidents on major oil pipelines, water pipes and storm drains. The Naroch and Pleshchenitsy observatories and the Brest, Soligorsk and Gomel regional seismic stations monitor seismic movements.

J. Quality assurance and control

The analytical control service of the Ministry of Natural Resources and Environmental Protection monitors the compliance of polluters with environmental standards and regulations. In cooperation with inspectorates and the State Ecological Expertise, it monitors: emissions and discharges; quality of air, surface water, wastewater, sediments and soils; pesticides in surface waters and soils; and waste management in enterprises. It also controls more than 250 analytical laboratories in enterprises. The service consists of a central laboratory, 7 regional divisions (oblasts and Minsk) of the Committees of Natural Resources and Environmental Protection and 20 intra-rayon environmental laboratories. The State standardization authorities have accredited all laboratories of the analytical control service. The Central Laboratory provides methodological guidance not only to these laboratories but also to the 25 hydrometeorological laboratories.

K. International monitoring projects

Belarus has actively cooperated with its neighbours over the past few years to monitor transboundary rivers. This has optimized the water-monitoring network on the Belarusian stretches of the rivers Dnepr, Neman, Pripyat, Zapadnyi Bug and Zapadnaya Dvina. The riparian States have agreed on monitoring parameters and sampling methods and analysis as well as on upgrading laboratory equipment and training monitoring experts. EU/Tacis, the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the Governments of Canada and Sweden have provided funds for these activities.

Within the programme of environmental capacity-building that the World Bank helped to implement in Belarus in 2001-2003 NSEM was evaluated and a concept was developed to make it more effective. Belarus participates actively in the UNECE Working Group on Environmental Monitoring and Assessment and has undertaken to integrate the Working Group's recommendations into its environmental policy framework.

II. INFORMATION MANAGEMENT AND REPORTING

A. Information management and communication

The information exchange under NSEM is conducted in accordance with procedures and in formats adopted by the Council of Ministers. The Scientific and Research Centre for Ecology of the Ministry of Natural Resources and Environmental Protection serves as central information and analytical centre of NSEM. It is responsible for processing, storing and publishing monitoring data and information transmitted by monitoring and information institutions within NSEM. In addition to the NSEM database created in 1997, the Centre also manages the State Registry of Monitoring Stations of NSEM established in 2000, the Registry of Analytical Laboratories Carrying out Measurements in the Environment established in 2003 and an archive of more than 1,700 reports on research and development work commissioned by the Ministry since 1989.

The Ministry has a reference and information centre with more than 5,000 environmental information documents. Some, including assessment and outlook reports, ecological bulletins, regulatory documents, are available in electronic form. Many reference and statistical materials are available on the Ministry's web site (<http://www.minpriroda.by>).

A server has recently been installed in the Ministry to establish a computer network and to provide the staff with access to legal and other databases, Internet and e-mail. All its territorial bodies (including 6 oblast and Minsk city committees and 121 local inspectorates) have access to e-mail.

B. State cadastres of natural resources

In accordance with the Law on Environmental Protection and the 1993 government resolution on natural resource cadastres, governmental bodies are responsible for collecting information on the state and the use of land, minerals, peat, waters, air, climate, forests, plants, animals and waste. Monitoring data from the activities described in section 3.2 constitute the core of these cadastres. There are also data on water resources and withdrawals, inventories of individual taxa of flora and fauna, climate, meteorological and hydrological data, air emissions, discharges into water bodies, ecosystem maps, air protection measures, energy and other mineral reserves. The waste cadastre includes statistical data on the generation, treatment and disposal of waste reported by enterprises, the collection and treatment of household waste reported by municipal services and data on landfills, waste-treatment technologies and plants, and on users of residuals.

The cadastres represent decentralized databases managed by organizations reporting to governmental agencies. For data collected outside NSEM, there is no protocol for data exchange. Data are collected in different forms (on paper and electronically) with different periodicity and accessibility to users including the general public. Access to some databases (e.g. on the use of forests) is restricted (for official use only). Some important data flows such as data on soil contamination and radiation are not covered by natural resource cadastres.

C. Environmental reporting

The NSEM monitoring results are reported to decision-making bodies. Since 2004 NSEM results are also available via the Internet (<http://ecoinfoby.net/>). In addition, NSEM data and information are published:

- Quarterly: In a bulletin *On Exceeding of Limits for Pollutant Emissions/Discharges into the Environment by Enterprises* and in the *Review of the State of Natural Environment of the Republic of Belarus*;
- Annually: In the review *National System of Environmental Monitoring: Observation Results, Yearbook of the Quality of Surface Waters, Yearbook of the Quality of Surface Waters by Hydrochemical and Hydrobiological Parameters, Yearbook of the State of the Pollution of the Atmospheric Air in the Cities and Industrial Centres; State Land Cadastre; and State Water Cadastre; and*
- Every five years: In the review *Land of Belarus*.

Institutions that carry out specific monitoring activities publish their data and information in their recurrent or ad hoc publications. Examples include the *State Report on the Sanitary and Epidemiological Situation*, published annually by the Ministry of Health, and the *Environmental Monitoring of the State of Forests*, published regularly by the Ministry of Forestry.

The Ministry of Natural Resources and Environmental Protection publishes a comprehensive national report on the state of the environment every four years. The last one (bilingual) came out in 2002 in 1000 copies together with a popularized version. Every year, the Ministry together with the National Academy of Sciences publishes a bulletin on environmental conditions in Belarus (1,000 copies), a reference and statistical publication on the state and protection of the environment (1,000 copies) and a collection of works on water resources (200 copies), as well as a quarterly interdepartmental bulletin “Natural Resources” (300 copies). Other publications include collections of environmental regulations, information materials, environmental standards and research papers.

Belarus reports regularly to the United Nations Commission on Sustainable Development and to governing bodies of applicable multilateral environmental agreements. National communications, national strategies and other information relating to its participation in conventions on biodiversity and climate change have been posted on official web sites.

D. Environmental statistics and indicators

The Ministry of Statistics and Analysis and its bodies gather statistical data on:

- Emissions of polluting substances in the atmospheric air (reported by 2,500 enterprises);
- Current environmental expenses, environmental and natural resources payments (reported by some 2,000 enterprises that have purification facilities);
- Forest management, fires and protection (reported by 130 forest users);
- Hunting management (reported by 300 tenants of hunting areas); and
- Nature reserves and national parks (six in total).

The Ministry of Statistics and Analysis publishes an annual statistical bulletin on these issues. It includes a section on environment and forestry. Every other year the Ministry publishes a statistical compendium on the environment in Belarus. These publications are circulated among public authorities and libraries. Other users may receive them upon request but have to pay for them.

It is the Ministry of Natural Resources and Environmental Protection that collects data on waste and water management on the basis of a State statistical reporting form. The data are stored in the relevant natural resource cadastre database. Some data is published in the Ministry’s periodic environmental publications.

The National Centre of Hygiene, Epidemiology and Public Health of the Ministry of Health gathers data, on the basis of another State statistical reporting form, on sanitary conditions, including data on drinking-water supply, pollution of atmospheric air, soil conditions, sources of adverse physical impacts and on the quality of consumer goods. The results are published annually in: the State report *On Sanitary and Epidemiological Conditions*; the collection of works on *Main Indicators of Public Health, Activities of the Sanitary and Epidemiological Service and of the State of the Environment*; and as part of the *Water Cadastre*. The data are also on the Centre's web site www.rcheph.by.

Belarus uses a wide range of indicators in its environmental assessments and reports. Many of these indicators represent bulky figures in tons and cubic metres that do not help decision makers and the general public to understand the cause and effect of environmental conditions, to link these with economic and social developments, to assess the cost-effectiveness of policy implementation and to make comparisons with other countries. Belarus has to update its system of environmental indicators to make it consistent with those used in Europe and worldwide. The development of a core set of environmental indicators for periodic publication may also be helpful.

III. THE DECISION-MAKING FRAMEWORK

A. Environmental monitoring

The key legislation on environmental monitoring includes the Laws on Environmental Protection, Hydrometeorological Activity, Air Protection, Ozone Layer Protection, Flora, Protection and Use of Fauna, and Legal Regime of Territories Suffered from Radioactive Contamination as a Result of the Accident on the Chernobyl Nuclear Power Station as well as the Land, Forestry and Water Codes.

The Council of Ministers adopted a series of decrees to establish the National System of Environmental Monitoring (NSEM) and make it operational. The NSEM Programme adopted in 1995 provides a general policy framework. It has three phases, with the final one – full operation – to be completed by the end of 2005. In September 2004, the Government ordered the Ministry to prepare, jointly with other institutions, a new draft programme for 2006-2010. It should be submitted to the Government by 1 July 2005 for adoption.

The 2004 National Strategy for Sustainable Social and Economic Development foresees, in particular:

- By 2010, the establishment of a national PRTR, a registry of soil contamination by heavy metals and persistent organic pollutants (POPs), and a registry of potentially hazardous chemicals and biological substances;
- Between 2010 and 2020, the introduction of a registry of waste disposal and treatment facilities, and of waste-treatment technologies; the drawing-up of an inventory of outdated pesticide stocks, and the harmonization of national ambient air quality standards with those of the European Union.

B. Institutional framework

From 1993 to 2004, NSEM covered 13 monitoring areas with six governmental bodies and the National Academy of Sciences taking the lead in one area or another. In 2004, medical monitoring and emergency monitoring, conducted by the Ministry of Health and the Ministry of Emergencies, respectively, were separated from NSEM. In total, some 20 monitoring institutions participate in 11 NSEM areas. In some areas, several institutions share monitoring activities. For instance, the State

Committee on Land Resources, Geodesy and Cartography, the National Centre for Radiation Control and Environmental Monitoring (NCRCEM) of the Ministry of Natural Resources and Environmental Protection, the Soil Science and Agro-chemistry Institute of the Belarus Academy of Sciences, and the Belarus State University participate in land monitoring.

The Ministry of Natural Resources and Environmental Protection is responsible for the organization and coordination of NSEM. It is the lead body in six of its monitoring areas.

In 1998 the Government established the Interdepartmental Coordination Board for NSEM Implementation. A Deputy Minister for Natural Resources and Environmental Protection chairs the Board, which meets twice a year. The Board:

- Coordinates the activities of Ministries and other national and local authorities in NSEM implementation;
- Sets priorities for financing NSEM;
- Reviews draft laws relating to NSEM; and
- Evaluates management, research and investment projects under NSEM.

In 2004, State budget financing for NSEM activities amounted to Rbl 208,603.3 million. This met only 14.7% of its total monitoring requirements, up from 12.8% in 2003.