

EUROPEAN NEIGHBOURHOOD AND PARTNERSHIP INSTRUMENT –

SHARED ENVIRONMENTAL INFORMATION SYSTEM

THE REPUBLIC OF BELARUS COUNTRY REPORT



August, 2012

Minsk, Republic of Belarus



This project is funded by the European Union

European Environment Agency



This project is implemented by the European Environment Agency

Legal notice:

This project is financed through a service contract ENPI/2009/210/629 managed by DG EuropeAid.

This publication has been produced with the assistance of the European Union. The contents of this publication are the sole responsibility of Zoï Environment Network, sub-contracted by EEA for this work, and can in no way be taken to reflect the views of the European Union.

European Environment Agency

Kongens Nytorv 6
1050 Copenhagen K
Denmark

Reception:

Phone: (+45) 33 36 71 00

Fax: (+45) 33 36 71 99

<http://www.eea.europa.eu/>

More information regarding the ENPI-SEIS project: <http://enpi-seis.ew.eea.europa.eu/>



Zoï Environment Network

International Environment House

Chemin de Balexert 9

CH-1219 Châtelaine

Geneva, Switzerland

Phone: +41 22 917 83 42

<http://www.zoinet.org/>

Author: **Mr. Konstantin Titov**

Contributors: **Ms. Irina Komosko, Ms. Olga Panteleyeva, Ms. Yulia Shevtsova, Mr. Aleksander Snetkov, Ms. Elena Novakovskaya, Ms. Alina Bushmovich, Mr. Saveliy Kuzmin, Ms. Svetlana Utochkina, Mr. Alexander Stankevich, Mr. Nickolai Denisov, Ms. Lesya Nikolayeva**

CONTENT

Summary	4
1. The structure of nature protection activity in the Republic of Belarus	6
2. Environmental monitoring in the Republic of Belarus	11
2.1 Monitoring of atmospheric air	12
2.2 Monitoring of ground water	15
2.3 Monitoring of ground waters	18
2.4 Monitoring of land (soils)	19
2.5 Monitoring of forests	20
2.6 Monitoring of flora	22
2.7. Monitoring of fauna	22
2.8 Monitoring of ozone layer	23
2.9 Geophysical monitoring	24
2.10 Radiation monitoring	24
2.11 Local monitoring	26
2.12 The system of social-hygienic monitoring	28
2.13 The system of monitoring and forecasting of emergency situations	29
3. Accounting of environmental impact sources	30
3.1 Emissions into atmospheric air	30
3.2 Discharge of sewage waters	33
3.3 Waste management	34
4. National environmental information resources, reporting and exchange of data	36
4.1 Environmental information of the Republic of Belarus	36
4.2 Environmental information resources of the Republic of Belarus	38
4.3 State reports and other printed environmental publications	41
4.4. Application of environmental indicators	42
5. International environmental agreements which the Republic of Belarus is a party to	44
5.1. Reporting within the framework of global IEAs	48
5.2. Reporting within the framework of regional IEAs	49
6. Steps for integration into shared environmental information system	51
Annex 1. Main indicators monitored within the National Environmental Monitoring System of the Republic of Belarus	53
Annex 2. The list of technological processes and facilities the emission sources of which are subject to compulsory inclusion into local environmental monitoring to control emission of pollutants into atmospheric air	63
Annex 3. The list of information classified as environmental information	64
Annex 4. The description of the main information resources	66
Annex 5. Environmental indicators in the Republic of Belarus	76

SUMMARY

This report has been developed within the framework of the European Neighbourhood Partnership Instrument to help develop a project “Shared Environmental Information Systems” (ENPI-SEIS project) in the Republic of Belarus. The project is aimed at the modernization, simplification, collection, exchange and application of data and information essential for the development and implementation of effective environmental policy.

The goal of the project is capacity building for the corresponding agencies in the EU neighbouring countries in the field of monitoring and analysis of the state of the environment, environmental reporting and dissemination of environmental information. The partner countries of the ENPI East region are: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine and Russia. It is expected that the ENPI-SEIS project will provide significant assistance to the partner countries in the following areas:

- Development of processes for the elaboration of environmental indicators agreed by different countries and corresponding to the EU approaches;
- Establishment of regular data flows to develop environmental indicators, meet the reporting needs at the national level as well as adhere to the major environmental agreements;
- Gradual development of the SEIS elements in the EU neighbouring countries and integration of their national and regional information resources into extended SEIS infrastructure;
- Assistance to reporting on the state of the environment at different levels;
- Regular development and dissemination of information on the course of the initiative and results achieved.

At the first regional meeting held in November 2010, the following themes were selected for the countries of the ENPI eastern region: atmospheric air, water resources and waste management.

This report describes the current institutional cooperation infrastructure and data/information availability in the Republic of Belarus in the sphere of atmospheric air protection, management of water resources and waste management.

Chapter 1 of the Report presents the current situation in the management of nature protection activities in the Republic of Belarus. Chapter 2 considers the National Environmental Monitoring System operational in the country. This chapter describes the organizational structure of the National Environmental Monitoring System of the Republic of Belarus, types of monitoring and the development and dissemination of environmental information. Chapter 3 provides information on sources of anthropogenic impact on a specific aspect of the environment (emissions of pollutants into atmospheric air, use of water and discharge of sewage into surface water bodies and management of industrial waste) and their accounting. Chapter 4 is devoted to the available information resources in the sphere of environmental protection, development of state and agency reports as well as the application of environmental indicators developed at the international level. Chapter 5 describes the participation of Belarus in international, global and regional environmental agreements. This chapter reviews the commitments of the Republic of Belarus to the timing and completeness of country report submission to international bodies. Chapter 6 analyses the strengths and weaknesses of the national environmental information system implementation in the Republic of Belarus, demonstrates the interest of the country

in cooperation in the ENPI-SEIS project and highlights priority issues that require support from the ENPI-SEIS project.

The report has been developed by Konstantin Titov with contributions from Alina Bushmovich, Saveliy Kuzmin, Svetlana Utochkina, and Alexander Stankevich, as well as from the departments and subordinated organizations of the Ministry of Natural Resources and Environmental Protection, coordinated by Irina Komosko, Olga Panteleyeva and Yulia Shevtsova and from the National Statistical Committee, coordinated by Alexander Snetkov and Elena Novakovskaya, under the guidance from Zoi Environment Network on behalf of the European Environment Agency.

1. THE STRUCTURE OF NATURE PROTECTION ACTIVITY IN THE REPUBLIC OF BELARUS

According to the Law of the Republic of Belarus №1982-XII as of November 26, 1992 “On the Protection of the Environment”, protection of the environment is an integral prerequisite of environmental safety and the sustainable social and economic development of society.

The main directions of the state policy of the Republic of Belarus in the sphere of environmental protection include:

- Ensuring the right of citizens to a favourable environment and compensation for damage caused by the violation of this right;
- Scientific provision for the protection of the environment;
- Rational (sustainable) use of natural resources;
- Ensuring the conservation of biological and landscape diversity;
- Improvement of the system for environment protection and the management of nature;
- Ensuring the ongoing operation of the National System of Environmental Monitoring in the Republic of Belarus;
- Provision and dissemination of environmental information.

The Law of the Republic of Belarus “On the Protection of the Environment” stipulates the bodies undertaking state administration in the sphere of environmental protection. Among them are: the President of the Republic of Belarus, the Council of Ministers of the Republic of Belarus, the Ministry of Natural Resources and Environmental Protection and its territorial bodies, other specially empowered Republican bodies of state administration and their territorial bodies, local Councils of Deputies, executive and regulatory bodies within the scope of their competence.

The President of the Republic of Belarus (<http://www.president.gov.by>) in the sphere of environmental protection:

- Defines a unified state policy;
- Approves state programmes of rational (sustainable) use of natural resources and protection of the environment;
- Approves the scheme of national environmental network;
- Exercises other powers entrusted upon him by the legislation of the Republic of Belarus.

The Council of Ministers of the Republic of Belarus (<http://www.government.by>) in the sphere of environmental protection:

- Adopts regulatory acts in the sphere of environmental protection;
- Ensures the development and implementation of state programmes of rational (sustainable) use of natural resources and protection of the environment;
- Establishes the order for keeping state cadastres for natural resources as well as the order of public accounting in the sphere of environmental protection;
- Establishes the order for the development and administration of public data fund on the state of the environment and sources of impact upon it;
- Establishes the order of administration of the national system of environmental monitoring of the Republic of Belarus;
- Identifies the structure of general purpose environmental information subject to compulsory dissemination, holders of such information that must disseminate it and frequency of dissemination;
- Exercises other powers entrusted upon it by the legislation of the Republic of Belarus.

The Ministry of Natural Resources and Environmental Protection of the Republic of Belarus (hereinafter referred to as Minprirody) is the Republican body of state administration in the sphere of nature management and protection of the environment implementing the environmental policy of the state (<http://www.minpriroda.gov.by>). Minprirody is subordinate to the Council of Ministers of the Republic of Belarus and exercises the powers entrusted upon it, both directly and through its territorial bodies. The main activities of the Ministry are defined as follows:

- Pursuing unified state policies, including economic and science-technology, in the area of environmental protection and rational use of natural resources, hydrometeorological activities, ecological certification and ecological audits;
- State management of the examination, protection, restoration and rational use of natural resources, including mineral resources, waters, flora and fauna; environmental protection; state regulation of hydrometeorology, ecological certification and audit;
- Regulation and coordination of activities of other governmental agencies, local executive and regulatory bodies, organizations involved in ensuring ecological safety, environmental protection and rational use of natural resources, including subsoil, hydrometeorological activities, climate control, ecological certification and ecological audit;
- State regulation of geological exploration of subsoil and hydrometeorological activities, as well as establishing conditions to promote organizations of all types of ownership involved in these economic activities;
- Interaction with local executive and regulatory bodies for the solution of environmental issues within its jurisdiction;
- State control in the sphere of environmental protection and hydrometeorological activities, ecological certification and audit;
- Ensuring the conservation and sustainable use of biodiversity, participation in the development and implementation of measures aimed at reproduction of flora and fauna species;
- Regulation, technical regulation and standardization in the sphere of environmental protection and use of natural resources;
- Ensuring unified measurements in the sphere of environmental protection and administration of records of analytical laboratories that undertake measurements in this sphere within its competence; specification of requirements to such laboratories.
- Organization of accounting and assessment of natural resources;
- Organization of administration for the National Environmental Monitoring System in the Republic of Belarus;
- Formation of the public data fund about the state of the environment and sources of impact upon it;
- Provision of environmental information to the Republican bodies of state administration, local executive and regulatory bodies and citizens; promotion of environmental awareness, participation in the development of the system for enlightenment, education and upbringing in the sphere of environmental protection;
- International cooperation, analysis, generalization and dissemination of international experience in the sphere of environmental protection and rational use of natural resources, regulation of climate control, hydrometeorological activities, ecological certification and audit.

The structural departments of Minprirody are:

- ***the Department for Geology*** (<http://depgeo.org.by/index.php>) and
- ***the Department for Hydrometeorology*** (<http://depgeo.org.by/index.php>) with the rights of a legal entity.

The objectives of the Department for Geology are:

- Pursuing unified state policy, including economic and scientific-technical policies in the sphere of nature management and subsoil protection;
- State administration in the sphere of subsoil use and protection, as well as replenishment of mineral raw material base;
- State control on the use and protection of subsoil;

The objectives of the Department for Hydrometeorology:

- Pursuing unified state policy in the sphere of hydrometeorology activities, regulation of climate control, as well as monitoring of atmospheric air, monitoring of surface waters and radiation monitoring;
- State administration in the sphere of hydrometeorology activities;
- Provision of hydrometeorological information and information received as the result of monitoring of atmospheric air, monitoring of surface waters and radiation monitoring to state bodies, legal entities and citizens in the established order;
- International cooperation in the sphere of hydrometeorological activities, regulation of climate control, as well as monitoring of atmospheric air, monitoring of surface waters and radiation monitoring.

The territorial bodies of Minprirody are:

- o Brest Oblast Committee of Natural Resources and Environmental Protection;
- o Gomel Oblast Committee of Natural Resources and Environmental Protection;
- o Grodno Oblast Committee of Natural Resources and Environmental Protection;
- o Minsk Oblast Committee of Natural Resources and Environmental Protection;
- o Mogilev Oblast Committee of Natural Resources and Environmental Protection;
- o Minsk City Committee of Natural Resources and Environmental Protection;
- o City and Raion Inspections of Natural Resources and Environmental Protection.

The implementation of some nature protection functions is assigned to other bodies of state administration and organizations of the Republic.

- The competence of the Ministry of Public Health of the Republic of Belarus (<http://minzdrav.gov.by/>) includes: social-hygienic monitoring of environmental and public health factors that are determined by the impact of external factors and the assessment of the quality of drinking water and food products.
- The Ministry of Forestry of the Republic of Belarus (<http://www.mlh.by/>) monitors the state of forests.
- The Ministry of Housing and Communal Services of the Republic of Belarus (<http://www.mjks.gov.by/>) is responsible for household water supply and drinking water quality, treatment of sewage, collection and disposal of solid household waste, including the waste of enterprises.
- The Ministry of the Emergency Situations of the Republic of Belarus (<http://rescue01.gov.by/>) is in charge of management in the sphere of monitoring, prevention and liquidation of emergency situations on the territory of the Republic.

- The National Statistical Committee of the Republic of Belarus collects, processes and disseminates information about the state and pollution of the environment (<http://belstat.gov.by/>).
- The Presidential Property Management Directorate of the Republic of Belarus manages protected areas (national parks, etc.).

Local Councils approve territorial programmes and measures of rational (sustainable) use of natural resources, dispose of and control the use of natural resources on the territory under their jurisdiction. Local executive and regulatory bodies develop and implement programmes and actions on rational (sustainable) use of natural resources and protection of the environment, exercise state control on the protection of natural resources, identify sites for waste disposal and organize collection, transportation, storage and neutralization of household waste generated on their territory.

There are also other agencies that contribute to the implementation of environmental protection policies, such as the State Committee on Property of the Republic of Belarus (monitoring of land), the State Customs Committee (protection of unique flora and fauna species from illegal export and protection of citizens and the environment from illegal import of hazardous materials). Departments of the National Academy of Sciences of the Republic of Belarus monitor various aspects of the environment: monitoring of flora, monitoring of fauna and geophysical monitoring.

Table 1 - Collection and storage of environmental information: responsibility of the agencies of the Republic of Belarus.

	MNR	NSC	ME	NAS	MF	MHCS	SCP	MAF	MT	MPH
Atmospheric air and depletion of the ozone layer	■	■	■							
Climate change	■									
Water resources and water quality	■					■				■
Land and soil pollution							■			
Waste	■					■				
Radiation situation	■									
Forests and lands of the forest fund					■					

	MNR	NSC	ME	NAS	MF	MHCS	SCP	MAF	MT	MPH
Biological resources, biodiversity, specially protected nature territories	■			■						
Transport		■								
Agriculture		■						■		
Energy		■								

Table 1, abbreviations:

MNR	The Ministry of Natural Resources and Environmental Protection
NSC	The National Statistical Committee
ME	The Ministry of Education
NAS	The National Academy of Sciences
MF	The Ministry of Forestry
MHCS	The Ministry of Housing and Communal Services
SCP	The State Committee on Property
MAF	The Ministry of Agriculture and Food
MT	The Ministry of Transport
MPH	The Ministry of Public Health
■	Lead agency
■	Other engaged agencies

2. ENVIRONMENTAL MONITORING IN THE REPUBLIC OF BELARUS

Currently, observations of the state of the environment in the Republic of Belarus are conducted under the National Environmental Monitoring System (hereinafter referred to as the NEMS). The decision to establish the NEMS was made by the Council of Ministers of the Republic of Belarus in 1993 (Resolution#247 on 20.04.1993). The main aim of establishing the NEMS was the provision of necessary environmental information to all management levels in order to develop a nature management strategy and make operational management decisions aimed at the provision of favourable living conditions for the population of the country. In addition the National Environmental Monitoring System is focused on a commitment to adhere to international environmental agreements, treaties and conventions, including the UNECE Convention on Access to Information, Public Participation in Decision-making Process and Access to Justice on Environmental Matters (hereinafter referred to as the Aarhus Convention).

Monitoring is one of the key instruments to assess the efficiency of programmes, plans and projects in the sphere of environmental protection and nature management, as well as territorial development of the regions of Belarus. Based on this and in accordance with Article 7 of the Law of the Republic of Belarus “On the Protection of the Environment” provision for the ongoing operation of the NEMS is one of the key priorities in the national environmental protection policy.

Minprirody coordinates the administration of the National Environmental Monitoring System in the Republic of Belarus.

The NEMS operates and progresses within the framework of the state NEMS development programmes. Implementation of actions of these programmes provides monitoring data required to assess the state of the environment and the main natural systems, and to implement international obligations for the provision of environmental information. Significant progress has been achieved in the technical and methodological support of the monitoring systems.

To collect data, the organizational structure of the NEMS has been formed, principles of network organization created, regulation of observations made and the structure of environmental information defined in addition, the order of receipt and provision of data and information to consumers at various levels have been established. Now the NEMS includes 11 independently organized types of monitoring. They have common general principles of operation and are based on a regulated system of information collection, processing, analysis and assessment. The NEMS has an extensive, scientifically grounded network of observations that consists of more than 4000 points that are part of the State Register of the NEMS Observation Points.

Organizational structure of NEMS:

1. Monitoring of atmospheric air.
2. Monitoring of surface waters.
3. Monitoring of ground waters.
4. Monitoring of lands (soils).
5. Monitoring of forests.
6. Monitoring of flora.
7. Monitoring of fauna.

8. Monitoring of ozone layer.
9. Geophysical monitoring.
10. Radiation monitoring.
11. Local environmental monitoring.

The regulatory base (statement on the type of monitoring and instructions regulating the order and special features of observations) has been developed and approved and observation networks formed for each type of monitoring that is part of the NEMS. The main list of monitored parameters is provided in Annex 1 of the present report.

For each type of monitoring there is an Information and Analytical Centre. There is also the Main Information and Analytical Centre of the NEMS (hereinafter referred to as MAIN of the NEMS) of the Republic of Belarus (<http://www.nsmos.by/>).

The Main Information and Analytical Centre and 11 Information and Analytical Centres for different types of monitoring ensure collection, storage and provision of environmental information to the consumers at various levels, including operational quarterly information, as well as annual analytical reviews of the state of the environment, trends and prediction of changes. Internet websites of the NEMS have been created and are kept up to date. Monitoring information is supplied to a wide range of users via mass media.

The NEMS interacts with the following systems to obtain comprehensive information that describes the state of the environment and its impact on public health:

1. The system of social-hygienic monitoring;
2. The system of monitoring and forecasting of emergency situations of natural and technogenic character.

Analytical and reference materials on the state of the environment are made available on an annual basis on the website of the Main Information and Analytical Centre of the NEMS (<http://nsmos.by/>). Information on all types of environmental monitoring in the Republic of Belarus is provided in the annual publication "The National Environmental Monitoring System of the Republic of Belarus: Results of Observations". This publication is developed by the Republican Unitary Enterprise "Belarusian Research Centre "Ecology" (hereinafter referred to as the RUE "Bel RC "Ecology") (<http://www.ecoinfo.by>) every year and is made available on the website of the Main Information and Analytical Centre of the NEMS in the Republic of Belarus (<http://www.nsmos.by/content/402.html>). Data on atmospheric air monitoring is used in the preparation of the National State of the Environment Report in the Republic of Belarus (<http://www.minpriroda.gov.by/ru/>) as well as annual environmental bulletin "The State of the Natural Environment of Belarus" (<http://www.minpriroda.gov.by/ru/bulleten>).

2.1 Monitoring of atmospheric air

The main goal of monitoring of atmospheric air quality is the assessment, forecast and identification of trends in air quality to prevent negative situations that may threaten public health and the environment. The system of monitoring of atmospheric air quality comprises observations of the concentration of pollutants in atmospheric air, atmospheric precipitations, snow cover and other objects specified by Minprirody. This type of monitoring is organized and conducted by the Department for

Hydrometeorology of Minprirody. The location of atmospheric air quality monitoring points is shown in Figure 1.

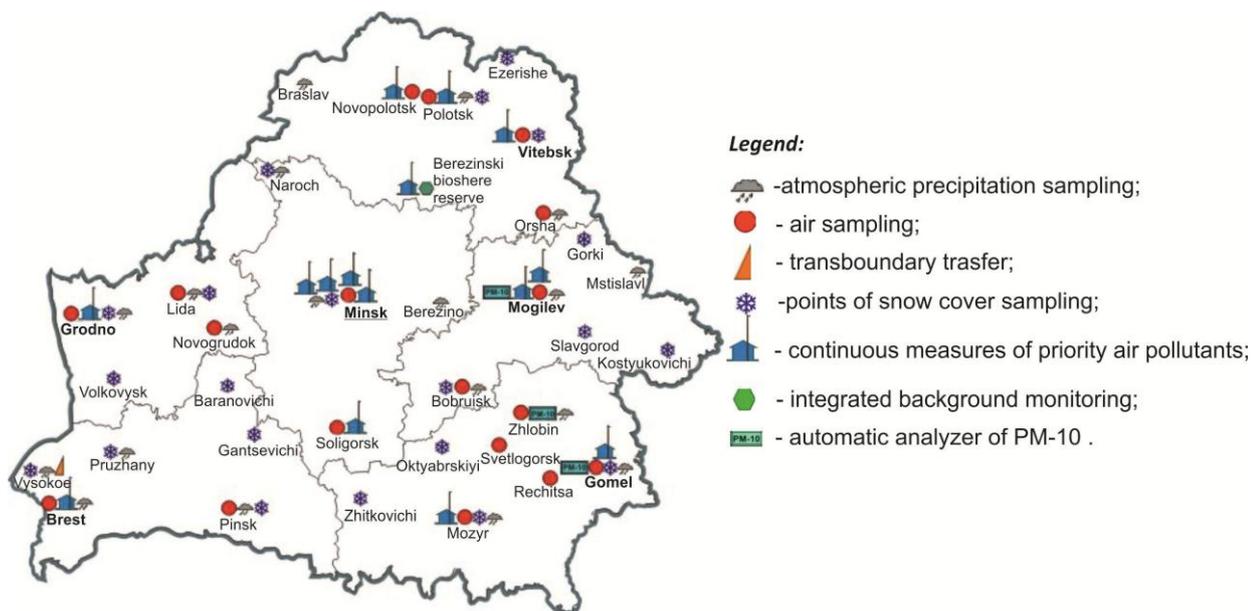


Figure 1 – Schematic location of atmospheric air quality monitoring points.

In 2010 the state of atmospheric air in the Republic of Belarus was monitored in 18 industrial cities including Oblast centers (Minsk, Brest, Grodno, Vitebsk, Mogilev, Gomel) as well as Polotzk, Novopolotzk, Orsha, Bobruisk, Mozyr, Rechitza, Svetlogorsk, Pinsk, Novogrudok, Zhlobin, Lida and Soligorsk. Regular observations were conducted in areas that covered 81,3% of population of cities and towns of the Republic. In addition to the monitoring programme, the state of the air in Baranovichi was examined. In settlements, stationary points for air quality observations are located in industrial, recreational, public and residential areas, as well as in road-adjacent zones.

The number of observation points is determined by the size of the population in a settlement: up to 50 000 residents – 1 point, 50 000 – 100 000 residents – 2 points, 100 000 – 200 000 residents – 2 or 3 points, 500 000 -1 000 000 residents – 5 to 10 points, over 1 000 000 residents – 10 to 20 points.

In 2010 atmospheric air quality was monitored at 61 points: Minsk – 12 stations, Mogilev – 6 stations, Gomel and Vitebsk – 5 stations in each city, Grodno and Brest – 4 stations in each city, other industrial centres – 1 to 3 stations. Fourteen automated stations are operational in Minsk, Vitebsk, Mogilev, Grodno, Brest, Gomel, Polotzk, Novopolotzk, Soligorsk and Mogilev industrial centre. These stations provide information on the concentration of priority pollutants in a real-time mode. Concentrations of the main pollutants were measured in all cities: solid particles in total (undifferentiated dust composition/aerosol), sulphur dioxide, carbon oxide and nitrogen dioxide. Concentrations of priority pollutants were also measured: formaldehyde, ammonia, phenol, hydrogen sulphide, carbon bisulphide, cadmium and lead – in 16 cities, volatile organic compounds (VOC) – in 9 cities. Such parameters as emissions of each pollutant (data of the National Statistical Committee), the size of the city, maximum permissible concentrations, and dispersion coefficient were considered in the selection of specific priority pollutants. Concentration of ground level ozone and PM-10 are regularly monitored at all automated stations and in Zhlobin according to the WMO standards.

The state of atmospheric air is evaluated in relation to of average daily and maximum permissible concentration of pollutants. The average daily concentrations of PM-10 and pollutants measured at automatic stations are compared to the average annual MPC. For stations with discretionary sampling, average annual concentrations are compared to average annual MPC, and maximum concentrations to one-time maximum permissible concentration.

Parameters such as the number of days (annually) when average daily concentrations exceed MPC and frequency (share) of samples that exceed maximum one-time MPC are used to evaluate the state of atmospheric air in the Republic of Belarus. Data on the number of days (annually) with average daily concentrations of PM-10 and ground level ozone obtained as the result of ongoing measurements are compared to the target indicators adopted by EU countries.

In 2010 **monitoring of atmospheric precipitation** was organized at 19 points. Parameters such as acidity, concentration of components of the major composition of salt and concentration of heavy metals were measured in the samples collected.

The snow survey is conducted in the period of maximum accumulation of moisture. In 2010 the snow survey was not conducted as there was no stable snow cover. In the winter period of 2008-2009 the snow survey was conducted at 21 observations points.

Contamination caused by pollutants transfer (as part of EMEP) is analyzed on the basis of results received at the specialized transboundary station Vysokoye (western border of the Republic). Since 2011, control of daily atmospheric precipitation has been made at the stations Mstislavl (eastern border of the Republic) and Braslav (north-western border of the Republic). The station of integrated background monitoring "Berezinskiy Zapovednik" controls the state of air and atmospheric precipitation according to the Global Atmosphere Watch Programme.

For the purposes of atmospheric air monitoring mobile and stationary observation points monitor weather conditions, as well as meteorological parameters such as speed and direction of wind, atmospheric pressure, temperature and relative air humidity.

Meteorological parameters monitored as part of snow cover observations include: snow cover onset data (SCOD), total amount of atmospheric precipitation since SCOD until the snow cover sampling time, dates with positive day air temperature since SCOD.

Responsibilities for the collection and analysis of data on the state of atmospheric air, atmospheric precipitation and snow cover in the Republic of Belarus are entrusted to the State Institution (SI) "The Republican Centre for Radiation Control and Environmental Monitoring" within the Information-Analytical Centre of Atmospheric Air Monitoring http://rad.org.by/about/section/oiz_vozduh.html.

Monitoring data are mainly used to develop operational and generalized information on changes in the level of air pollution. Database management programmes make it possible to analyze long-term series of observations, compare initial (established) data with long-term data, reveal trends and make short-term (daily) forecasts.

Atmospheric dispersion models are not used in data processing; there is no positive experience of integrated data processing combined with emissions of pollutants and prediction of changes in air quality of cities. Air quality forecasting system is underdeveloped in the Republic. Monitoring data are mainly used to develop operational and generalized information on changes in the level of air pollution.

Analytical information about the state of atmospheric air is made available on the websites of Minprirody (<http://minpriroda.gov.by/ru/>), Main Information and Analytical Centre of the NEMS (www.nsmos.by), the State Institution "The Republican Centre for Radiation Control and Environmental Monitoring" (<http://rad.org.by/monitoring/air.html>). These websites provide information on the concentration of air pollutants in real-time mode in cities as well as reference and analytical materials on the state of air quality in the Republic of Belarus on a weekly, quarterly and annual basis.

2.2 Monitoring of surface waters

Monitoring of surface waters is a system of regular observations of hydrological, hydrochemical and hydrobiological parameters of surface waters in order to timely identify negative processes, predict their development, prevent negative consequences and assess the efficiency of measures aimed at the rational use and protection of surface waters. Observations are carried out by the structural departments subordinated to Minprirody.

In 2010 the monitoring of surface waters on the territory of the country was conducted at 292 observation points, including 35 transboundary areas of water courses located in the vicinity of the national border. The monitoring network of surface waters is presented in Figure 2.



Figure 2 – Monitoring network of surface waters.

Regular observations are conducted at 153 water bodies: 82 water courses and 71 water reservoirs. During the period from 2006 to 2010, 46 new observation points on water reservoirs and 17 new points of observation on water courses were included into the State Registrar of Observation Points. This has increased the density of the observation network at water reservoirs (up to 62%) and water courses (up

to 87%) of the value recommended by Eurowaternet. Eurowaternet recommends the number of monitoring stations on the rivers of the territory of a country on the basis of 1 river station per 1000 km² of the territory of the country and the number of water reservoirs – on the basis of 1 water reservoir station - per 1750km² of the territory of the country. Thus, the optimal number of observation points on water courses of the Republic should be 208 and the number of water reservoirs with observations should be 119.

In 2010, within the framework of implementation of international agreements, the Republic of Belarus continued monitoring of changes in hydrochemical and hydrobiological indicators at 35 transboundary areas of water courses. Up to 90 hydrochemical parameters were measured in the samples of surface waters. The list of parameters and frequency of observations of the state of surface waters at the transboundary areas of the rivers of the Republic of Belarus are presented in table2.

Table 2 – List of parameters and frequency of observations for the state of surface waters on the transboundary areas of rivers.

<i>Parameters of the state of surface waters</i>	<i>Unit of measurement</i>	<i>Frequency of observations</i>	
I) Indicators of physical properties and gaseous composition of water	1. Temperature	°C	Monthly
	2. Transparency	unit	Monthly
	3. Suspended particles	mg/dm ³	Monthly
	4. pH	unit	Monthly
	5. Dissolved oxygen	mgO ₂ /dm ³	Monthly
	6. Electric conductivity	мкСм/см	Monthly
II) Mineral composition of water and concentration of main ions	1. Chloride ion	mg/dm ³	7 times a year
	2. Sulphate ion	mg/dm ³	7 times a year
	3. Hydrogen carbonate ion	mg/dm ³	7 times a year
	4. Magnesium ion	mg/dm ³	7 times a year
	5 Calcium ion	mg/dm ³	7 times a year
	6. Sodium ion	mg/dm ³	7 times a year
	7. Potassium ion	mg/dm ³	7 times a year
	8. Dry residues	mg/dm ³	7 times a year
	9. Hardness	mg/dm ³	7 times a year
III) Concentration of organic substances	1. BOD 5	mgO ₂ /dm ³	Monthly
	2. COD	mgO ₂ /dm ³	Monthly
	3. Oil products	mg/dm ³	Monthly
	4. SASs	mg/dm ³	Monthly
	5. Phenols (total)	mg/dm ³	Monthly
	6. PAH	mg/dm ³	Once a year
	7. PCBs	mg/dm ³	Once a year
	8. DDT and its derivates	mg/dm ³	Once a year
	9. Lindane (γ-HCH)	mg/dm ³	Once a year
IV) Concentration in biogenic substances in water	1. Ammonium nitrogen	mg/dm ³	Monthly
	2. Nitrate nitrogen	mg/dm ³	Monthly
	3. Nitrite nitrogen	mg/dm ³	Monthly
	4. Organic nitrogen by Kjeldahl (TKN)	mg/dm ³	Monthly
	5. Phosphate phosphorus	mg/dm ³	Monthly
	6. Total phosphorus	mg/dm ³	Monthly
V) Concentration of elements	1. Iron (total)	mg/dm ³	Monthly

Parameters of the state of surface waters		Unit of measurement	Frequency of observations
	2. Manganese	mg/dm ³	Monthly
	3. Copper	mg/dm ³	Monthly
	4. Zinc	mg/dm ³	Monthly
	5. Nickel	mg/dm ³	Monthly
	6. Chromium (total)	mg/dm ³	Monthly
	7. Lead	mg/dm ³	Monthly
	8. Cadmium	mg/dm ³	Monthly
	9. Arsenic	mg/dm ³	Once in a quarter
	10. Mercury	mg/dm ³	Once in a quarter

Assessment of the quality of surface waters, state of water bodies and the level of their pollution is carried out according to the approved assessment criteria for water quality and norms of MPC of chemical substances in the water of fishery water bodies. The level of pollution of water bodies is assessed by environmental indicators (BOD5, concentration of ammonium nitrogen, phosphates and nitrates in the rivers and total concentration of phosphorous and nitrogen in lakes) and an indicator showing excess of MPC of the total number of measurements (repeated concentration that exceeds MPC by 1,0 MPC for a particular substance or substances in total). These indicators are recommended by the international community and make it possible to compare the state of surface water bodies of the Republic of Belarus with other countries. The complex indicator – the Index of Water Pollution (IWP) is also used in Belarus. Average annual concentrations for 6 components are used for the calculation of IWP: dissolved oxygen, easily oxidizable organic substances (BOD5), ammonium nitrogen, nitrite nitrogen, phosphate phosphorus and oil products.

Biological indication methods that study the structure of hydrobiocenosis and (or) their components are used for the assessment of hydrobiological parameters of water ecosystems. In each particular case the quality of surface waters is assessed on the basis of hydrobiological parameters with the consideration of ecological particularities of water hydro biocenosis.

Monitoring of the hydrological regime of the rivers and water bodies in the Republic is carried out at 137 points (123 on the rivers and 14 on the lakes) and 2 marsh gauges. These points are located across the territory of Belarus on large, medium and small rivers, on the most significant lakes and water reservoirs, and on water bodies of scientific and recreational interest – the lakes Naroch, Lukomskoye, Osveyskoye and Chigirinskoye water reservoir.

Several elements of the hydrological regime are being monitored at their monitoring points: water level (at 08.00 and 20.00 local time), water discharge according to water level, water temperature and ice phenomena, and suspended and bottom sediments at some points. SI “The Republican Hydrometeorological Centre” (<http://hmc.by>, <http://www.pogoda.by/>) implements hydrological monitoring. The results of hydrological monitoring are presented in the form of a flash-map and a table (<http://pogoda.by/315/mapGidro.html>). The section “Surface Waters” of the State Water Cadastre is managed by the Republican Hydrometeorological Centre. An “Annual Data on Surface Waters: Regime and Resources” report for the Republic, which includes information on the hydrological regime, is prepared.

The State Institution “The Republican Centre of Analytical Control in the Sphere of Protection of the Environment” (<http://analitcentre.by/ru>) monitors the state of surface waters using hydrochemical

parameters including sample collection and testing and measurement of hydrochemical indicators. The State Institution “The Republican Centre of Radiation Control and Environmental Monitoring” (<http://rad.org.by/>) monitors the state of surface waters using hydrobiological parameters, including sample collection and testing and measurement of hydrobiological indicators. The Information-Analytical Centre of the National Environmental Monitoring System of the Republic of Belarus (http://rad.org.by/about/section/oiz_voda.html), which operates within the framework of the State Institution “The Republican Centre of Radiation Control and Environmental Monitoring” ensures the collection, storage, processing and analysis of monitoring data for surface waters; develops and provides environmental information obtained as the result of monitoring of the surface waters; administers the State Water Cadastre (section “Surface Waters”) and prepares information on the quality of surface waters according to hydrochemical and hydrobiological parameters in the Republic of Belarus.

2.3 Monitoring of ground waters

The monitoring of ground waters is a constituent part of the National Environmental Monitoring System of the Republic of Belarus and is conducted in all major hydrogeological regions to study changes in quality and level of ground and artesian waters in natural (lightly disturbed) conditions. Points for ground waters monitoring are observation wells equipped for various water-bearing horizons and lightly permeable aquitards. Monitoring is organized and conducted by the Republican Unitary Enterprise “The Belorussian Research Geological Exploration Institute” (<http://geology.org.by/>) and Central Hydrogeology Party BGE RUE “Belgeology”.

In 2010 observations were conducted at 94 hydrogeological posts at 363 monitored wells (Figure 3).



Figure 3 –Monitoring points of ground waters.

In 2010 monitoring of the quality of ground waters was conducted at 257 wells, and measurements of the water table– at 363 wells. The chemical composition of ground water is assessed according to 33 macro and micro indicators in line with the Instructions on Ground Water Monitoring. Samples for physical and chemical analysis are taken once a year and measurements of the levels of ground water are conducted 3 times a month. To increase the trustworthiness of information on the water table of ground waters, 101 automated gauges have been installed on the territory of the Republic. They automatically measure the water table in wells: in the basin of Zapadnaya Dvina river there are 4 wells, in the basin of Neman river there are 32 wells, in the basin of Pripyat river - 16 wells and in the Dnieper river basin - 47 wells. In natural and lightly disturbed conditions, evaluation of ground waters quality is conducted according to Sanitary Norms and Rules (SanPiN 10-124 RB Drinking Water. Hygienic requirements for water quality in centralized systems of water supply. Quality control). Results of tests of the chemical composition of ground waters have shown that 94,4% of samples comply with sanitary and hygienic norms.

The Department for hydrogeology and monitoring of ground waters of the Republican Unitary Enterprise “Belarusian Research Geological Exploration Institute” (hereinafter referred to as RUE “BRGEI”) (<http://geology.org.by/otdel8.html>) is the Information and Analytical Centre of Ground Water Monitoring.

2.4 Monitoring of land (soils)

Monitoring of land is done through a system of ongoing observations of the state and changes in soils under the influence of natural and anthropogenic factors, as well as changes in composition, structure and state of land resources, distribution of lands according to the categories of land uses and types. Information obtained from monitoring studies allows scientists to identify, assess and predict changes, prevent and mitigate consequences of negative processes, determine the effectiveness of measures aimed at conservation and reproduction of soil fertility and protection of land from negative consequences. The network of soil monitoring points is presented in Figure 4.

The Information-Analytical Centre of Land Monitoring of the NEMS operates on the basis of RUE “Information Centre of Land-Cadastral Data and Land Monitoring” (<http://www.iczem.by/index.htm>) of the State Committee of Property of the Republic of Belarus.

Legend

Monitoring points:

Agricultural lands:

- water erosion;
- ▲ wind erosion;
- pollution with pesticides residues;
- compositional analysis of soils cover;

Lands in populated and transport areas:

- concentration of heavy metals in soils of settlements;
- concentration of heavy metals in soils of road sides;
- Background territories.

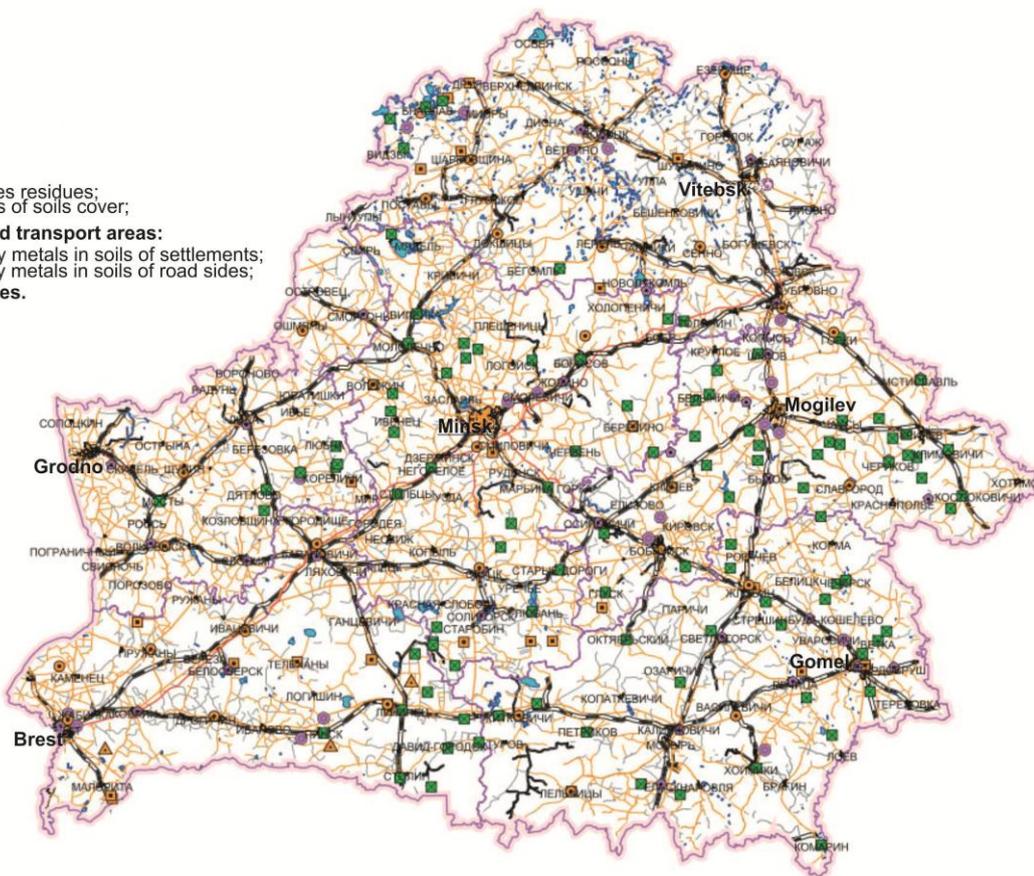


Figure 4 – Land Monitoring Points.

2.5 Monitoring of forests.

The goal of forest monitoring is to obtain information to:

- Assess the current state of the main forest forming species of the Republic;
- Assess forest ecosystems as a whole and their components;
- Develop forecasts of changes in the current level of exploitation and impact of anthropogenic and natural factors;
- Provide information for management, design and technical decisions in the sphere of environmental safety, restoration, conservation and rational use of forest soils' fertility, biological and landscape diversity; habitat forming properties of forests.

The monitoring of forests has several aspects:

- Monitoring of state of forests – general state of forests, including the impact of air pollution;
- Monitoring of forest pathology – state of forests under the impact of pests and diseases;
- Environmental and ameliorative monitoring of ameliorated forest lands – state of forests under the influence of ameliorative works;
- Monitoring of forest wetlands (areas of saturated soils) – state and dynamics of forest wetlands' ecosystems.

In 2010 the forest management company RUE “Belgosles” (<http://belgosles.basnet.by/>) monitored the general state of forests. The lands of the forest fund of Belarus occupied 9,4 million hectares as of January, 2010. Out of that, 8.0 million hectares of land are covered by forest (85%). Forest cover makes up 38.5% of land of the Republic.

During the field period of 2010, assessment of control trees at 411 permanent plots of trans-national network (16x16 km) of forest monitoring (Figure 5) was undertaken. Monitoring at 22 permanent sample plots was also conducted to study the impact of stress factors (including air pollution) on the state of forest ecosystems in more detail.

At the beginning of 2010, specially protected nature areas occupied 1291,9 thousand hectares (13,7%) of the territory of forests in the Republic of Belarus. In 2010, 33 permanent plots of trans-national network 16 x 16 km (763 control trees) were examined, making up 8,0% of the total permanent plots examined in the country.

The Information and Analytical Centre of Forest Monitoring of the NEMS operates on the basis of forest management RUE “Belgosles” (http://belgosles.basnet.by/index.php?option=com_content&task=view&id=38&Itemid=39) of the Ministry of Forestry of the Republic of Belarus.

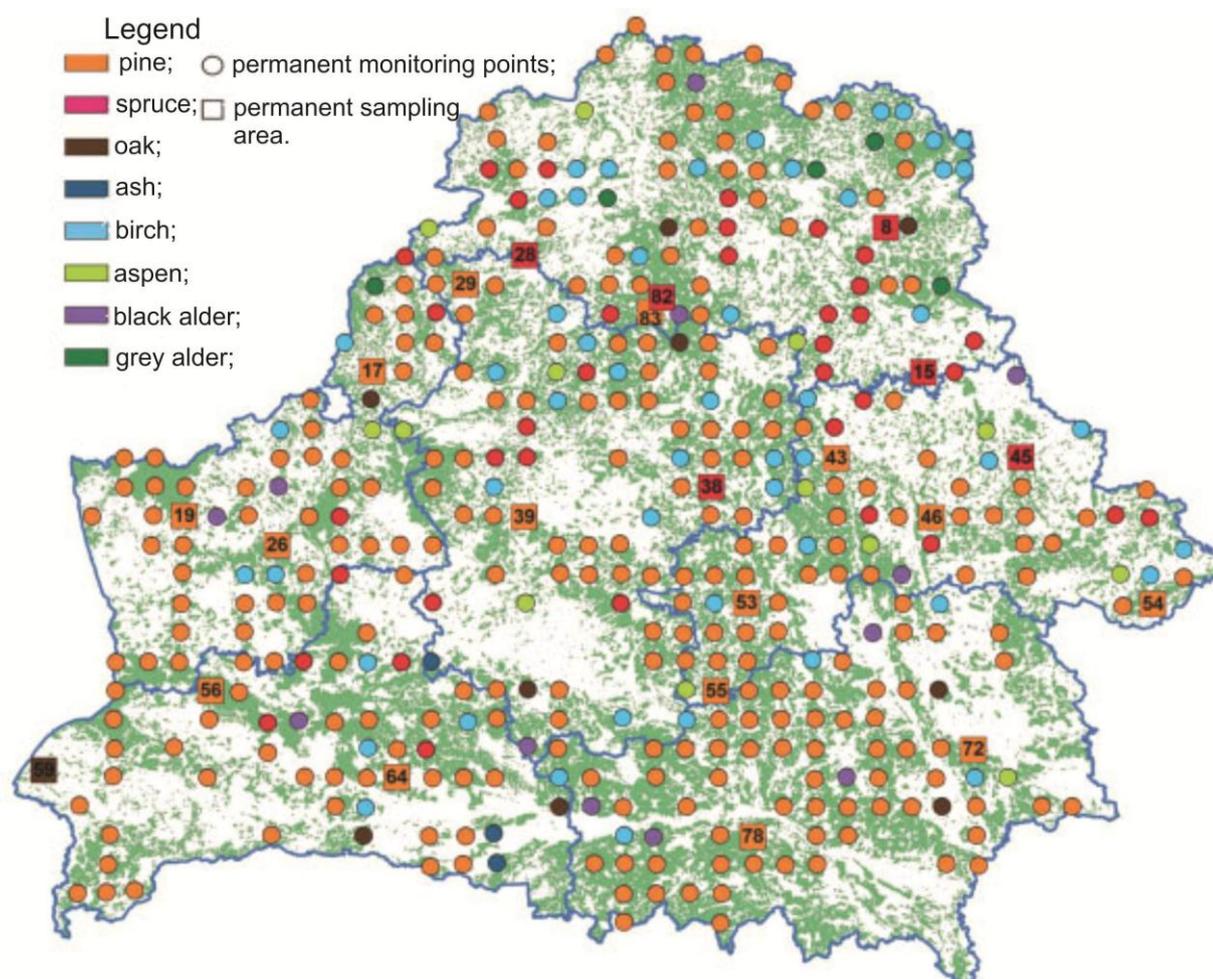


Figure 5 - The network of forest monitoring points.

2.6 Monitoring of flora

Monitoring of flora within the NEMS involves a system of observations of the state of flora and their habitats, as well as an assessment and prediction of changes – all aimed at conservation of biodiversity, provision of sustainable development and rational use of flora resources. Monitoring is conducted by the departments of the Institute of Experimental Botany of the National Academy of Science of the Republic of Belarus (<http://botany-institute.bas-net.by/>) and the Lakes Research Laboratory of the Belarusian State University (<http://www.niloz.narod.ru/>). In 2010 monitoring of flora was undertaken in 6 areas: meadow and swamp vegetation and their combinations; aquatic vegetation; monitoring of protected plants and fungus (Red Book species); resource forming species (fungus and berrying grounds); protective forests and green areas in settlements. The scheme of monitoring points for flora is presented in Figure 6.

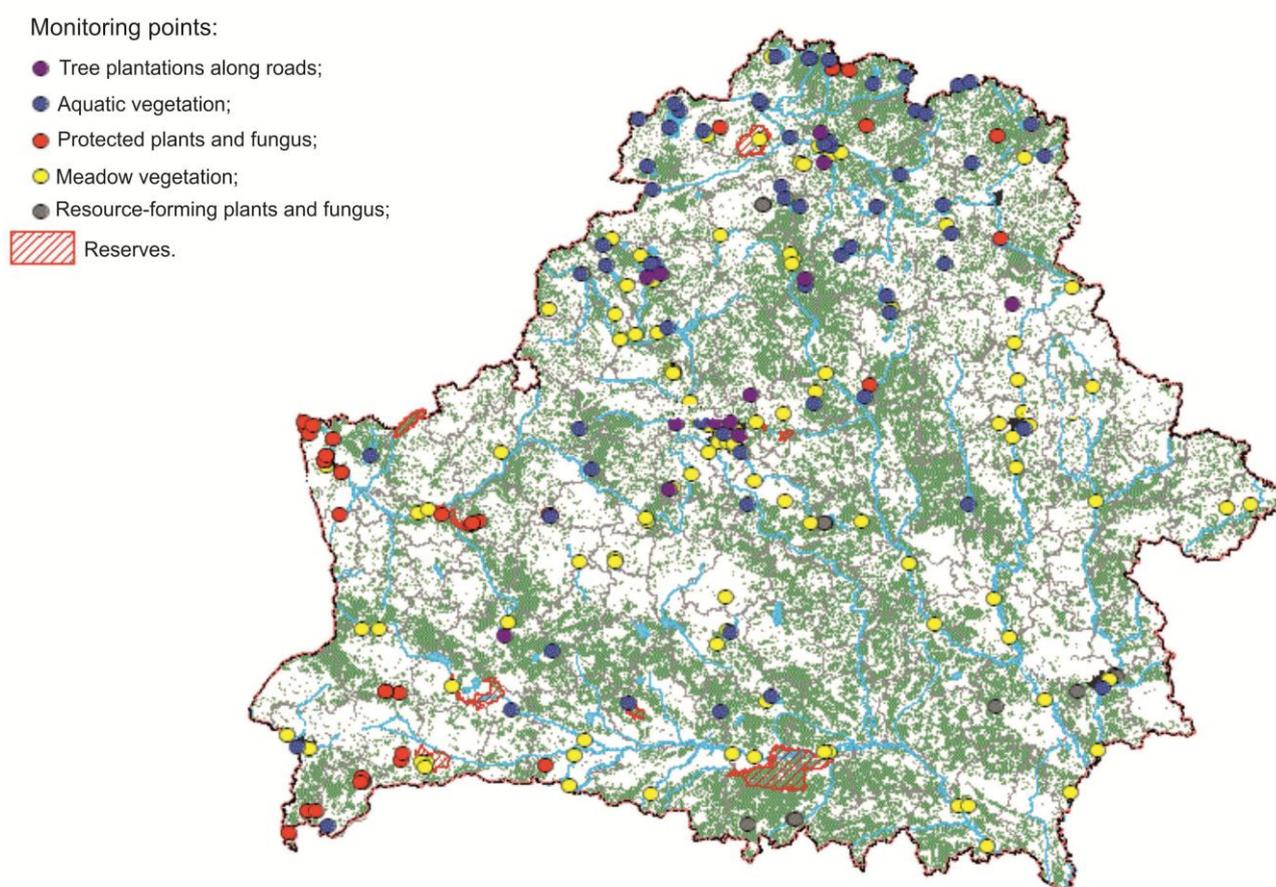


Figure 6 – Schematic location of flora monitoring points.

The Information and Analytical Centre of Flora Monitoring of the NEMS operates under the flora monitoring sector of the State Scientific Institution (SSI) “The Institute of Experimental Botany” of the National Academy of Sciences of Belarus (<http://monitoring.basnet.by/>).

2.7 Monitoring of fauna

Monitoring of fauna involves the system of observations over the state of fauna and their habitats as well as an assessment and prediction of changes under the influence of natural and anthropogenic factors. Assessment and monitoring of the biological diversity of fauna of Belarus is carried out by the

Scientific Practical Centre of Biological Resources of the National Academy of Sciences of the Republic of Belarus (<http://biobel.bas-net.by/zoo>).

In 2010 monitoring of fauna as part of the NEMS was undertaken for the following: wild game species and their habitat; fish species and their habitat; wild animals that are Red Book species and their habitats and wild animals and their habitats protected according to the international obligations. An assessment and generalization of monitoring information and identification of trends and changes of parameters that characterize the state of fauna is based on the analysis of initial data obtained at 115 observation points (Figure 7).

Monitoring points:

-  Game species and their habitats;
-  Fishery species;
-  Red Book species and their habitats;
-  Species protected according to the international obligations.



Figure 7 – The network of fauna monitoring points.

The Information and Analytical Centre of Fauna Monitoring of NEMS operates on the basis of the department of environmental monitoring of RUE “Bel RC “Ecology” (<http://www.ecoinfo.by/content/60.html>).

2.8 Monitoring of ozone layer

Monitoring of ozone layer in the Republic of Belarus is conducted at the Minsk Ozone Measuring Station of the National Scientific and Research Centre for Ozone Sphere Monitoring of the Belarusian State University (<http://ozone.bsu.by/>). In 2010 regular measurements of total ozone column (TOC), aerosol

optical depth (AOD) of atmosphere in the UV spectrum, concentration of ground-level ozone (troposphere ozone) as well UV irradiation levels at the Earth's surface were performed.

Monitoring data of TOC form the experimental base to assess the state of ozone layer and its transformation as the result of anthropogenic impact and natural planetary processes. They are also used to study the impact these changes make on climate change globally and regionally as well as predict changes in doze of biological activity of solar UV radiation at the Earth's surface. Measurements of ground-level ozone concentration and atmospheric aerosol concentration describe pollution of tropospheric air and are the safety criteria of human and animal activity. Time series and spatial measurements of ground-level ozone concentrations are used to assess the intensity of transboundary pollutants transfer.

The Information and Analytical Centre for Ozone Layer Monitoring of the NEMS operates on the basis of the National Scientific and Research Centre for Ozone Sphere Monitoring of the Belarusian State University (<http://ozone.bsu.by>). Data on total ozone content, UV index and concentration of ground-level ozone on a daily basis are available on the website.

2.9 Geophysical monitoring

Geophysical monitoring, being the constituent part of the National Environmental Monitoring System is conducted by the Centre of Geophysical Monitoring of the National Academy of Sciences of the Republic of Belarus (<http://cgm.org.by/>) annually in the following areas:

- Seismic monitoring, i.e. the system of ongoing all day round observations of seismic events of natural and artificial origin over a range of frequencies and distances, as well as processing of data, analysis of results and evaluation of the seismic situation;
- Geomagnetic monitoring including periodical observations of the geodynamic processes at the polygons and continuous observations at the stations of the current state of geomagnetic fields;
- Monitoring of the Earth' gravitational field;

The Information and Analytical Centre of Geophysical Monitoring of the NEMS operates on the basis of State Institution "The Centre of Geophysical Monitoring" of the National Academy of Sciences of the Republic of Belarus (<http://cgm.org.by/index.php?id=478>). Analytical information on seismic and geomagnetic monitoring on the annual basis is available on the website.

2.10 Radiation monitoring

Radiation monitoring involves a system of regular long-term observations to assess radiation levels and forecast changes in the future. Radiation monitoring is an integral part of the National Environment Monitoring System of the Republic of Belarus.

In 2010 regular observations of the radiation levels in the Republic were conducted to identify the level of radioactive pollution of air, ground waters and soils in areas that were contaminated as the result of the disaster at the Chernobyl Nuclear Power Plant (NPP). Monitoring is conducted by the organizations of the Department for Hydrometeorology of Minprirody.

In the Republic of Belarus 55 points of radiation monitoring that measure *exposure dose of gamma radiation (ED)* were in operation in 2010. Measurements of ED levels were performed daily, including weekends and holidays. At 27 observation points which are located across the country, radioactive fallout from the ground layer of atmospheric air has been controlled (round table was used for sample collection). Total beta-activity of natural atmospheric precipitations has been measured daily at 21

points of observations. Sample collection at 6 observation points that was put into standby mode, has been conducted once in 10 days.



Figure 8 - Radiation monitoring points for atmospheric air, surface waters and soils.

Sample collection of radioactive aerosols in the ground level of atmosphere with filter-ventilation units has been conducted in 7 cities of the Republic of Belarus (Bratslav, Gomel, Minsk, Mozyr, Mstislavl, Pinsk). In the cities of Mogilev and Minsk collection of samples was conducted in a stand-by mode (once in 10 days), at the other observation points located in zones affected by nuclear power plants of neighbouring counties – on a daily basis. Total beta-activity and concentration of short-period radionuclides, primarily iodine-131 were measured in samples of radioactive aerosols. Isotopic abundance of gamma-emitting radionuclides was measured in monthly samples of radioactive aerosols and monthly atmospheric fallouts grouped by territories.

In 2010 radiation monitoring of surface waters has been conducted at 6 rivers of the Republic of Belarus flowing across the areas contaminated as the result of disaster at the Chernobyl Nuclear Power Plant: the Dnieper (city of Rechitsa), the Pripyat (city of Mozyr), the Sozh (city of Gomel), the Iput (city of Dobrush), the Besed (the city of Svetilovichi), the Nizhnyaya Braginka (the city of Gden), and at the Drisvyaty lake (Drisvyaty village), which is the cooling pond of Ignalina nuclear power plant. Sample collection of water and measurements of water discharge were undertaken on a monthly basis on the main monitored rivers. At the Nizhnya Braginka river sample collection was made every quarter. Concentrations of Cesium-137 and Strontium-90 were measured in the collected samples. Margin of error for measurements of low-level Cesium-137 activity in surface waters was 25-30%.

Research of vertical migration of radionuclides in soils is carried out within the network of landscape-geochemical polygons. Their conditions (landscape and geochemical) are typical of areas with various levels of contamination by Cesium-137, Strontium-90 and Plutonium isotopes. This makes it possible to assess dynamics of migration processes in different types of soils and forecast self-purification of soils as the result of natural processes.

In 2010 research of vertical migration of radionuclides in soils was conducted at 4 observation points that are part of the network of the Department for Hydrometeorology of the Ministry of Natural Resources and Environmental Protection. ED levels were measured at the surface of soils and at the height of 1m; gamma-ray spectrometry of soil samples was conducted.

The Information and Analytical Centre of Radiation Monitoring operates on the basis of the department of scientific and practical developments and information on radiation and the environment. This department is part of the SI “The Republican Centre of Radiation Control and Environmental Monitoring” (http://rad.org.by/about/section/onpr_i_rei.html). The information on radioactive and environmental status in the Republic of Belarus is made available on the websites of the Ministry of Natural Resources and Environmental Protection. (<http://www.minpriroda.gov.by/ru/>) and “The Republican Centre of Radiation Control and Environment Monitoring” (<http://rad.org.by/monitoring/radiation.html>).

2.11 Local environmental monitoring

Local environmental monitoring within the NEMS is conducted to control changes in areas, where sources of negative impact on the environment are located. In the Republic of Belarus this monitoring is conducted by users of natural resources operating facilities that produce adverse environmental impact. Methodological guidance for measurements as well as the state analytical control for compliance with the standards of permissible impact on the environment are assigned to the SI “The Republican Centre of Radiation Control and Environment Monitoring” (<http://analitcentre.by/ru>).

Local environmental monitoring controls:

- Emission of pollutants into the air from stationary sources (development of the network started in 2000);
- Discharge of sewage into surface water bodies (development of the network started in 2000);
- Ground waters in areas with identified or potential sources of pollution (development of the network started in 2005);
- Soils in areas with identified or potential sources of pollution (development of the network started in 2007).

Local monitoring of emissions of air pollutants is compulsory for stationary sources of technological processes and facilities included into the list approved by the Ministry of Natural Resources and Environmental Protection (Annex 2). Besides, local monitoring may be obligatory at other stationary sources indicated by the territorial bodies of Minprirody.

In 2010 local monitoring of emissions of pollutants in the air was carried out at 160 enterprises. In the period of 2001-2010 the number of enterprises where emissions of air were controlled as part of the local monitoring within the NEMS has increased by 3 times. About 29 thousand measurements of controlled substances from 1068 stationary sources have been performed.

In the city of Minsk the local monitoring of pollutants emitted into atmospheric air was conducted at 17 enterprises, which account for nearly 80% of total emissions from stationary sources of the city. Over the year more than 5 thousand measurements of pollutants from 154 sources have been performed.

Table 3 – The local monitoring of pollutants in selected oblasts.

Oblasts	Number of enterprises	Contributory measurements	Number of sources
Minsk oblast	19	4000	139
Brest oblast	21	1800	100
Vitebsk oblast	26	>3500	95
Gomel oblast	29	>6700	219
Grodno oblast	19	2700	115
Mogilev oblast	28	>5000	256

The list of parameters and the frequency of local monitoring to control emission of pollutants in the air is established by the territorial bodies of Minprirody. The capacity of the stationary source and the level of adverse impact on atmospheric air are taken into account, at least than once in a month. The primary information includes:

- number of the source of emissions and name of the emitting source;
- volume of emission (m³/s);
- name of a substance and its code;
- concentrations (mg/m³);
- actual emission of a substance (g/s);
- permissible emission (g/s);

Local monitoring of sewage discharge into the water bodies has been carried out at 141 enterprises of the Republic of Belarus. In 2001 the number of monitored enterprises was 45, however the network of observation points has been constantly growing and in 2010 the number of facilities increased by three times.

In the basin of Zapadnaya Dvina river local monitoring of sewage discharge was conducted at 23 facilities, which are responsible for more than 85% of the total volume of sewage in the basin. According to the monitoring data environmental services of enterprises performed about 9,3 thousand measurements of pollutants in 2010.

In the Neman river basin the local monitoring of sewage discharge was carried out at 33 enterprises which account for nearly 80% of the total volume of sewage discharge. Environmental services of enterprises performed more than 17,8 thousand measurements of pollutants.

In the Dnieper river basin the local monitoring of sewage discharge was implemented at 61 facilities. They account for more than 85% of the total volume of sewage discharge in the basin. During the year the environmental services of enterprises have performed nearly 26,0 thousand measurements of pollutants.

In the Pripyat river basin sewage discharge was controlled at 18 objects located in the cities of Mozyr, Pinsk, Bereza, Beloozersk, Luninetz, Ivanovo, Gantzevichi, Zhytkovichi, Drogichin, Soligorsk, Slutzk,

Starye Dorogi, Kopyl, Kletsk, Lyuban. During the year environmental services of the enterprises performed more than 8,1 thousand measurements of pollutants.

The local monitoring of ground waters in 2010 was conducted at 254 facilities. Within the year nearly 58 thousand measurements of pollutants have been performed. Data of the background wells and hygienic standards for domestic water supply 2.1.5.10-21-2003 “The Maximum Permissible Concentrations of Chemical Substances in Water Bodies for Domestic Use and Amenities” are used to assess the state of ground water bodies and identify quality trends.

In 2010 the local monitoring of ground waters was conducted:

- In impact areas of pesticides disposal sites; at all 7 disposal sites (Gorodokskiy, Postavskiy, Verkhnedvinskiy, Dribinskiy, Slonimskiy; Brestskij disposal site, which has been already liquidated and at the Petrikovskiy disposal site which is in the process of liquidation).
- In impact areas of irrigated agricultural fields. Monitoring of the state of ground waters in 2010 was carried out at 19 objects. More than 2,1 thousand measurements of pollutants were performed.
- In impact areas of filtration fields. Local monitoring of ground waters in 2010 was conducted at 14 objects of the given group. More than 3,3 thousand measurements of pollutants were performed.
- In impact areas of sludge drying beds, which are not associated with the industry. The observations over the quality of ground waters were executed at 20 objects. Within the year nearly 7 thousand of pollutants’ measurements were performed.
- In impact areas of polygons of solid household, solid industrial and toxic wastes, which do not refer to the industrial sites. In 2010 the monitoring of ground waters was conducted at 135 sites. More than 21 thousand measurements of pollutants were performed.
- In impact areas of industrial facilities. In 2010 observations were conducted at 59 industrial enterprises. More than 23 thousand of measurements were performed.

As of summary **monitoring of the state of soils** in impact areas of the largest polluters has been organized at 46 enterprises of the country. These are the enterprises of steel and machinery construction industry, fuel and energy industry, petrochemical sector, industrial and construction complex.

The Information and Analytical Centre of the Local Monitoring of the NEMS is on operation on the basis of the environment monitoring department of RUE “Bel RC “Ecology” (<http://www.ecoinfo.by/content/60.html>).

2.12 The system of social and hygienic monitoring (SHM)

In 2010 research of the main medical and demographic processes that occur in the Republic of Belarus at the regional, oblast and Republican levels was conducted in the system of social and hygienic monitoring. The research also looked at morbidity patterns in general and broken down by classes. The territories were ranked on the basis of sickness rates with the highest values.

The SHM in the Republic of Belarus is undertaken by the Republican Centre of Hygiene, Epidemiology and Public Health of the Ministry of Public Health (http://www.rcheph.by/ru/catalog/page_22_39.html).

2.13 The system of monitoring and forecasting of emergency situations

The system of monitoring and forecasting of emergency situations has been established to identify sources of emergencies of technogenic and natural character, forecast occurrence of emergency situations, their scale and possible scenarios to take necessary measures aimed at the prevention and liquidation of emergencies, minimize their social and economic consequences in the country.

Monitoring and forecasting of emergency situations in the Republic of Belarus is undertaken by the Republican Emergency Management and Response Centre under the jurisdiction of the Ministry of Emergency Situations of the Republic of Belarus.

3. ACCOUNTING OF ENVIRONMENTAL IMPACT SOURCES

State accounting in the sphere of environmental protection is carried out according to the order of the Council of Ministers of the Republic of Belarus for the purposes of state regulation of nature protection activities and to plan measures that will reduce the negative impact of economic and other activity on the environment. State accounting is undertaken by the territorial organisations of Minprirody and other specially empowered Republican bodies of state administration. The areas of accounting are: economic entities whose activity have a negative impact on the environment, including environmentally hazardous activities; types and quantity of pollutants emitted and discharged into the environment; types and level of harmful physical and other impacts on the environment.

The President of the Republic of Belarus or an empowered state body determines the criteria to classify economic or other activity as environmentally hazardous or having a negative impact on the environment.

In carrying out accounting for environmental protection, the territorial bodies of Minprirody keep a state register of legal entities and individual entrepreneurs whose economic or other activity has an adverse impact on the environment. At registration, each legal entity and individual entrepreneur is assigned a nature user number according to the place of economic or other of activity which records their impact on nature.

Legal entities and individual entrepreneurs should maintain a record of how their economic activity uses natural resources, the pollutants emitted and discharged into the environment, waste management and other types of adverse impact on the environment in the order established by Minprirody and other specially empowered Republican bodies of state administration (in line with their competences).

Data on natural resources being used, pollutants emitted and discharged into the environment, waste management and other types of adverse impact on the environment should be accounted for in the environmental passport of an enterprise and state statistical records.

3.1 Emissions into atmospheric air

The main sources of atmospheric air pollution in the Republic of Belarus are automotive transport, facilities of the energy sector, industrial and agricultural enterprises. The transboundary and regional pollutant transfers as well as natural sources also make a contribution to air pollution. Assessment of pollutants input into the atmosphere is a challenge due to the variety of sources, complex composition of emissions, photochemical and other processes in atmosphere. At present in the Republic of Belarus the form 1-os (air) of statistical observation records emissions of pollutants into atmospheric air from stationary sources. . Enterprises that have stationary sources of emissions report according to the form 1-os (air).

Emissions of pollutants into the air are determined as being the total amount of polluting substances that are emitted by the stationary and mobile sources.

Emissions from stationary sources are counted as the total amount of pollutants emitted into the air from all organized and non-organized stationary sources. Emissions of pollutants are determined on the basis of forms of reporting documentation in the sphere of environmental protection and inventory acts for the emission of pollutants into atmospheric air.

Inventory of emissions of air pollutants is conducted for:

- New, modernized, reconstructed stationary sources of emissions within a period not later than 2 years since the date of projected capacity of technological equipment;
- Operational stationary sources of emissions once in every:
 - 4 years – facilities with an impact on atmospheric air classified as the first category;
 - 5 years – facilities with an impact on atmospheric air classified as the second or third category;
 - 6 years – facilities with an impact on atmospheric air classified as the fourth category;
 - 10 years – facilities with an impact on atmospheric air classified as the fifth category.

The classification of facilities according to the categories is undertaken in line with the Instruction “Order on Classification of Facilities with an Impact on Atmospheric Air” (Order of Minprirody No. 30 as of May, 29, 2009).

Instrumental and computational methods and a combination of both are used in the inventory of air emissions.

State statistical reporting according to the form 1-os (air) “Reports on the Emissions of Polluting Substances and Carbon Dioxide into Atmospheric Air from Stationary Sources” is provided by legal entities (except for small business enterprises) with stationary sources of emissions that have an adverse impact on atmospheric air. For these entities, the amount of polluting substances allowed for emission is established by the territorial bodies of Minprirody and permits for emissions into atmospheric air are granted, (apart from polluting substances of the first hazard class) for 25 tons or more per year and (or) 1 kg or more per year of pollutants of the first hazard class over the reporting period. The structure of the report required by the form 1-os (air) is as follows:

Section 1 “Air pollutants: emissions, treatment and utilization”. Information is provided on emitted pollutants of: sulphur dioxide, carbon monoxide, nitrogen oxide, nitrogen dioxide, hydrocarbons, non-methane volatile organic compounds;

Section 2 “Emission of air pollutants by substances”. Information on the emitted pollutants except for sulphur dioxide, carbon monoxide, nitrogen dioxide, nitrogen oxide;

Section 3 “Availability of stationary sources of emissions and gas purification units”;

Section 4 “Emissions of carbon dioxide (CO₂) into atmospheric air from boiler and furnace fuels”. Information on the emissions of carbon dioxide resulting from burning of natural gas, furnace oil, coal and coal processing products, peat, fuel bricks, wood and other types of fuel;

Section 5 “Implementation of measures to reduce emission of pollutants into atmospheric air”.

The data of state statistical reporting according to form 1-os (air) are used in the development of statistical books (http://belstat.gov.by/homep/ru/publications/2012_8.php), national reports and bulletins on the state of the environment and other information publications (<http://www.nsmos.by/content/541.html>).

Systematic and constant work aimed at implementation of measures to reduce air emissions is carried out in the field of atmospheric air protection. These measures apply the best available technologies at enterprises generating electric and thermal energy, ferrous and non-ferrous metals, construction materials (concrete, glass, bricks, light expanded clay aggregate, lime), as well as at wood processing plants, oil refineries, factories producing mineral fertilizers and petrochemicals. Implementation of these measures made it possible to restrain the growth of air pollution from stationary sources at the rate of 0,2% in relation to 1% growth of GDP. In 2010 the level of air pollution was reduced by 6,6% compared to the rate in 2005.

Over the period of 2009-2010 more than 715 events and 310 engineering solutions were implemented resulting in the reconstruction or start of operations of 453 gas purification units. In 2010 the volume of air pollutants emitted by stationary sources totaled 377,1 thousand tons.

Accounting of emissions of heavy metals and persistent organic pollutants from stationary sources is carried out:

- since January 2004 till January 2012 according to the methodological recommendations on the identification and assessment of emission sources of heavy metals and persistent organic pollutants, approved by a Decree of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus № 503 as of December 12, 2003;
- since January 2012 according to TKP 17.08-13-2011 “Protection of the Environment and Nature Management. The Atmosphere. Emissions of Pollutants into Atmospheric Air. Rules to Calculate Emissions of Persistent Organic Pollutants” and TKP 17.08-14-2011, “Protection of the Environment and Nature Management. The Atmosphere. Emissions of Pollutants into Atmospheric Air. Rules to Calculate Emissions of Heavy Metals”.

The calculation of emissions from mobile sources is based on the amount of fuel consumed and data on the breakdown of the transport fleet operating on the territory of the Republic of Belarus, by ecological classes (of engines) in per cent in relation to the total number of vehicles. This is based on information provided by the Ministry of Transport and Communications of the Republic of Belarus according to records in the sphere of environmental protection.

Since April 2010, accounting of air pollutants emitted by mobile sources has been carried out according to the “Instruction on the Order of Accounting of Air Pollutants from Mobile Sources of Emissions” (№ 6, as of February 15, 2010) approved by the Resolution of the Ministry of Natural Resources and Environmental Protection. The following input data have been established for the accounting of emissions:

1. Volume of fuel by types used for the operation of mobile sources of emissions broken down by Oblast (Brest, Vitebsk, Gomel, Grodno, Minsk, Mogilev and the city of Minsk) according to section 1 of the state statistical reporting form 4-tek (fuel) “Report on the leftovers, purchase and consumption of fuel” approved by the Resolution № 250 as of October 30, 2009 of the National Statistical Committee.

2. Data on the breakdown of the transport fleet by environmental classes (of engines) in per cent in relation to the total number of vehicles. This is based on the information provided by the Ministry of Transport and Communications. As of 01.01.2011 the breakdown of the Belarusian transport fleet by ecological classes (of engines) is as follows (letter of the Ministry of Transport and Communications № 09-01-21/1232 as of 04.03.2011):

- transport vehicles uncertified (Class 1 and lower) – 41%;
- transport vehicles, ecological class 2 – 19%;

- transport vehicles, ecological class 3 – 30%;
- transport vehicles, ecological class 4 – 7%;
- transport vehicles, ecological class 5 – 3%.

3. Data on the volume of fuel consumed by aircrafts for take off and landing, taxiing and en route over the territory of the Republic of Belarus at the height up to 900 meters. Data on the emissions of rail vehicles, (traction and carriage rolling stocks) are provided by the State Organization “Belarusian Railway” in line with the technical code of the established practice TKP 17.08-12-2008 (02120) “Protection of the Environment and Nature Management. The Atmosphere. Emissions of Pollutants into Atmospheric Air. Rules to Calculate Emissions from Enterprises of Railroad Transportation”.

Reduction of emissions of air pollutants from mobile sources has been achieved due to the implementation of such measures as:

- renewal of buses, lorries and cars with vehicles of higher ecological classes and lower level of emissions;
- a growth in the number of vehicles running on compressed gas has led to an increased consumption of gaseous motor fuel;
- supply of environmentally clean diesel and petrol fuel that complies with European requirements for transport vehicles Euro -4 and Euro- 5;
- implementation of measures to produce bio-diesel;
- increased share of electric passenger transport; in some regions this type of transport provides more than 50% of the total passenger transportation;
- organization of combined container transportation. Container trains, such as “Viking”, “Mongolian Vector” and others transport more than 225 thousand 20ft containers.

In 2010 implementation of these measures led to a reduction in the emissions of pollutants into atmospheric air by 7,1% compared to a 2005 baseline, despite an average annual growth of motor fleet in the country of 4,8-5%.

In 2010 the volume of pollutants emitted into the air by mobile sources of emissions totaled 942,3 thousand tons.

3.2 Discharge of sewage waters

In the Republic of Belarus over 90% of sewage waters are discharged into water bodies. Housing and communal sector accounts for 60% of the total water discharge, whereas industrial and agricultural sectors - for 16 and 24% accordingly.

The Water Code of the Republic of Belarus states that discharge of sewage waters into water bodies is permitted only if the discharge does not cause an increase in MPC of substances in the water body and (or) if sewage waters are treated by the water user to comply with the norms established by the state administrative body on the use of natural resources and protection of the environment. Discharge of substances for which MPC has not been established into water bodies is prohibited.

Volume of sewage waters discharged and concentration of pollutants in them are controlled by state statistical observation according to the form 1-water (Minprirody).

The following water users report according to state statistical reporting form 1-water (Minprirody) "Report on the Use of Water":

- water users with daily intake of 50 cubic meters of water (or more) from the surface and ground sources;
- water users with daily intake of 300 cubic meters of water (or more) from communal (agency) water supply system or other domestic water systems and the discharge of sewage into communal (agency) canalization;
- water users that take water for agricultural needs from organizations (agencies) of irrigation systems, collective intakes and own intakes with average daily intake of 150 cubic meters of water or more;
- water users that intake from ground sources of mineral water;
- water users that have recirculating water systems with an average daily capacity of 3000 cubic meters of water (or more), regardless of the amount of fresh water intake;
- water users that discharge sewage into water bodies (water reservoirs, water courses), subsoil, ground waters with an application of agricultural irrigation fields, absorption fields, underground drainage filtration, filtration trenches, sand-gravel filters, sewage ponds and other tanks available in the environment.

Report on the form 1-water (Minprirody) has the following structure:

Section 1 "Water intake, use and transmission";

Section 2 "Water discharge and treatment of sewage" (information on various types of tanks for sewage waters, categories of sewage waters, volume of sewage discharged, sewage discharged without treatment, sewage treated insufficiently, sewage treated at the purification stations according to the established norms, capacity of treatment facilities and drainage fields);

Section 3 "Concentration of pollutants by types in sewage discharged into water bodies" (concentration of the following pollutants: BOD₅, COD, oil products, mineralization, suspended particles, sulphate ion, total phosphorous, ammonium ion in nitrogen equivalent, nitrate ion in nitrogen equivalent, nitrite ion in nitrogen equivalent, total nitrogen, SASs, phenols, total iron, total chromium, nickel, copper, lead, cadmium, cobalt, molybdenum);

Section 4 "General Information";

Section 5 "Implementation of measures to reduce concentration of pollutants in sewage discharged into water bodies".

Data of the state statistical report according to form 1-water (Minprirody) is used in the development of statistical books (http://belstat.gov.by/homep/ru/publications/2012_8.php), national reports and bulletins on the state of the environment, other information publications (<http://www.nsmos.by/content/541.html>).

Statistical data prove that over the last 5 years intake of water in the Republic of Belarus has reduced by 7,6%, consumption of fresh water by 12%, discharge of sewage into water bodies – by 8,5%. Significant reduction of anthropogenic pressure on the water bodies has been achieved due to the reconstruction, modernization and construction of water treatment facilities. Over the last 5 years, 49 water treatment facilities have been put into operation in the framework of the state programme "Clean Water". It was supported by local and Republican nature protection funds.

3.3 Waste management

Waste (according to the Law of the Republic of Belarus “On Waste Management”) is any substance or object generated in the process of economic or human activity that does not have any particular application at the place of generation or that has partially or fully lost its consumption properties. Industrial waste – waste generated in the course of economic activity of legal entities and individual entrepreneurs (production of goods, generation of energy, provision of services), by-products of extraction and beneficiation of mineral resources. Consumption waste- waste generated in the course of human life that is not related to economic activity, waste generated in a community of garage owners, community of dacha owners and other consumer groups, sweepings of streets and yards generated in public areas of populated areas.

In 2010 the volume of industrial waste in the Republic of Belarus was about 43,78 mln tonnes. The most significant share of bulky waste production is accounted for by halite waste, halite slimes clay-salt (about 27,8 million tons) and phosphogypsum (746,8 thousand tons) in the total amount of industrial waste.

In 2010 the level of industrial waste use (except for halite waste and clay-salt slime) was 80%. Waste of animal and plant origin is characterized by a high level of application in agriculture and wood processing industry.

There has been a steady growth in the recovery of secondary materials from household waste: 16% in 2009 and 25% and more – in 2010.

State statistical observations according to the form 1-waste (Minprirody) collects data on waste production and application.

State statistical report according to the form 1-waste (Minprirody) “Report on Industrial Waste Management” is submitted by legal entities and separate subdivisions whose economic activity is related to the industrial waste management, except for legal entities that generate waste similar to household waste, such as paper and cardboard, packaging, used luminescent tubes and mercury lamps if the total annual volume of such waste makes 50 tonnes and less.

The report according to the form 1-waste (Minprirody) contains the following information:

- Name and code of waste (according to the classifier);

- Information on the hazard class of waste and its physical state;

- Data on the volume of waste generated over the reporting period (year);

- Information on waste movement over the reporting period: receipt of waste including imported waste transfer (selling), export, use and neutralization of waste; disposal and storage of waste.

Data of the state statistical report according to the form 1-waste (Minprirody) are used in the development of statistical books (http://belstat.gov.by/homep/ru/publications/2012_8.php), national reports and bulletins on the state of the environment and other information materials (<http://www.nsmos.by/content/541.html>).

4. NATIONAL ENVIRONMENTAL INFORMATION RESOURCES, REPORTING AND DATA EXCHANGE

4.1 Environmental information of the Republic of Belarus

The system for processing, dissemination and provision of environmental information has been developed taking into account the requirements of the UNECE Aarhus Convention. Minprirody has approved a list of information that is classified as environmental information (Resolution #22 as of May 29, 2003) (Annex 3).

The Law of the Republic of Belarus “On the Protection of the Environment” defines the concept of “environmental information”, composition of information as well as its sources and types; methods of provision and dissemination of information; requirements applied to the provision of environmental information; conditions and terms of restricted access to environmental information; provision of environmental information to public bodies and other state organizations, citizens and legal entities, the order of provision of specialized environmental information; the order of dissemination of specialized and general environmental information.

A state data fund on the state of the environment and impacts has been established. The data of this fund are made up of environmental information collected and kept by Minprirody, the Ministry of Forestry, the Ministry of Agriculture and Food, the Ministry of Emergency Situations, the Ministry of Education, the State Committee of Property, the State Inspection of Flora and Fauna at the President of the Republic of Belarus, the National Academy of Sciences of the Republic of Belarus, local executive and regulatory bodies and other state bodies and organizations. The main task of the state data fund is collection, processing, storage and systematization of environmental information; information on its structure, content, holders and ensuring access to environmental information for state bodies and state organizations, other legal entities and citizens. Environmental information subject to mandatory dissemination is also defined. The structure of environmental information, bodies responsible for its dissemination and frequency of dissemination are presented in Table 4.

Table 4 - The structure of general environmental information subject to mandatory dissemination.

Structure of environmental information	Holder of environmental information	Frequency of dissemination	Method of dissemination
1. List of information contained in the general register of environmental information of the state data fund on the state of the environment and environmental impacts as well as the registers of environmental information of the state data fund on the state of the environment and environmental impacts	Minprirody and other state bodies and organizations that keep and store environmental information	Once a year	Presentation of information on information boards, displays, information is made available at the official websites of information holder;
2. Information on the radioactive and environmental situation in Belarus	Minprirody (SI RCRCEM)	No less than once in 7 days	Information is made available on the official websites of SI RCRCEM, Minprirody and in media
3. Information on excess of limits	Minprirody (RUE)	Once a quarter	Information is made

Structure of environmental information	Holder of environmental information	Frequency of dissemination	Method of dissemination
of pollutants emission/dischARGE into the environment	“Bel RC “Ecology”)		available on the website of the MIAC of the NEMS; publication of the information bulletin
4. Information on the concentration of total nitrogen, ground layer ozone and UV index	National SRC for Ozone Sphere Monitoring of the Belarusian State University	Once in 7 days	Information is made available at the website of the National SRC for Ozone Sphere Monitoring of the Belarusian State University
5. Information on the environmental situation in the Republic of Belarus	Minprirody	Once a year	Publication of the environmental bulletin “State of the Environment in Belarus”
6. Information on the environmental situation in the Republic of Belarus, its trends, use of natural resources and state policy in the sphere of environmental protection	Minprirody	Once in 4 years	Publication of the National State of the Environment Report of the Republic of Belarus
7. Information on the state of the environment on the basis of monitoring conducted within the framework of the National Environmental Monitoring System of the Republic of Belarus	Minprirody (RUE “Bel RC “Ecology”)	Once a year	Information is made available on the website of the MIAC of the NEMS in the Republic of Belarus; publication of the annual review “The National Environmental Monitoring System of the Republic of Belarus: Results of Observations”
8. The list and a short description of rare and endangered species in Belarus, including subspecies, varieties of wild plants and animals; information on their habitats, biology, numbers and trends, main threats, conservation measures, as well as international and national nature conservation importance of wild plants and animals	Minprirody	No less than once in 10 years	Publication of the Red Book of the Republic of Belarus

The holders of environmental information keep registers that are included into the general register of environmental information of the state data fund on the state of the environment and environmental impacts developed by Minprirody. Holders of environmental information pass their registers to Minprirody on an annual basis, but not later than the 1st of October. Minprirody ensures publication of the general register in hard copy and makes the information of the general register available on its

official website. At the time of the development of this report however, the general register has not been published.

4.2 Environmental information resources of the Republic of Belarus

In the Republic of Belarus there are more than 30 information resources (excluding websites and portals) in the sphere of the ecology and protection of the environment. Table 5 provides brief information on the main information resources.

Table 5 - Brief information on the main information resources.

Resource	Additional characteristics of the information resource	Organization that keeps the state information resource	Time interval, updated
1. The state cadastre of atmospheric air	-	RUE "Bel RC "Ecology" (http://www.ecoinfo.by/)	1990-2010, annually
2. The state climatic cadastre	-	SI "Republican Hydrometeorological Centre" (http://hmc.by/)	1881-2010, annually
3. Cadastre of anthropogenic emissions and sources of green house gases	-	RUE "Bel RC "Ecology" (http://www.ecoinfo.by/)	1990-2010, annually
4. Database "Pavetra"	Pollution of atmospheric air	SI "Republican Centre of Radiation Control and Environmental Monitoring" (http://rad.org.by/)	1996-2010, monthly
5. Database "ASPavetra"	State of atmospheric air	SI "Republican Centre of Radiation Control and Environmental Monitoring" (http://rad.org.by/)	2007–2010, daily
6. Database "Apadki"	Chemical composition of atmospheric precipitation and snow cover	SI "Republican Centre of Radiation Control and Environmental Monitoring" (http://rad.org.by/)	2001-2010, monthly
7. Database "Radiation monitoring of atmospheric air"	-	SI "Republican Centre of Radiation Control and Environmental Monitoring" (http://rad.org.by/)	2001-2010, monthly
8. Database "Monitoring of atmospheric air at the station "Berezinskiy Zapovednik"	-	SI "Republican Centre of Radiation Control and Environmental Monitoring" (http://rad.org.by/)	1998-2010, monthly
9. The state water	-	RUE "Central Scientific Research	2000-2010,

Resource	Additional characteristics of the information resource	Organization that keeps the state information resource	Time interval, updated
cadastre, generalized data on water resources		Institute of Integrated Use of Water Resources” (http://www.cricuwr.by/)	annually
10. The state water cadastre, data on the regime and resources of surface waters	-	SI “Republican Hydrometeorological Centre” (http://hmc.by/)	1990-2010, annually
11. The state water cadastre, ground waters of the Republic of Belarus	-	RUE “Belarusian Research Geological Exploration Institution” (http://geology.org.by/)	2000-2010, annually
12. The state water cadastre, statistical reports of water users	Use of water	RUE “Central Scientific Research Institute of Integrated Use of Water Resources” (http://www.cricuwr.by/)	1990-2010, annually
13. The state water cadastre – permit for special water use	-	RUE “Central Scientific Research Institute of Integrated Use of Water Resources” (http://www.cricuwr.by/)	2003-2010, on the ongoing basis (when new data is available)
14. Database “Monitoring of surface waters according to hydrochemical indicators”	-	SI “Republican Centre of Radiation Control and Environmental Monitoring” (http://rad.org.by/)	1986-2010, monthly
15. Database “Monitoring of surface waters according to hydrobiological indicators”	-	SI “Republican Centre of Radiation Control and Environmental Monitoring” (http://rad.org.by/)	1986-2010, monthly
16. Information database on integrated use and protection of waters of river basins	-	RUE “Central Scientific Research Institute of Integrated Use of Water Resources” (http://www.cricuwr.by/)	1991-2010, on the ongoing basis (when new data is available)
17. «RECONT» data base	Radioactive pollution of soils and surface waters	SI “Republican Centre of Radiation Control and Environmental Monitoring” (http://rad.org.by/)	1986-2010, on the ongoing basis (when new data is available)
18. The state cadastre of waste	-	RUE “Bel RC “Ecology” (http://www.ecoinfo.by/)	2009-2010, annually
19. The register of storage, disposal and neutralization waste sites	-	RUE “Bel RC “Ecology” (http://www.ecoinfo.by/)	2008-2010, monthly

Resource	Additional characteristics of the information resource	Organization that keeps the state information resource	Time interval, updated
20. The register of waste use facilities	-	RUE "Bel RC "Ecology" (http://www.ecoinfo.by/)	2008-2010, monthly
21. Database on pesticides that are not suitable for use and territories polluted by them	Pesticides that are not suitable for use at warehouses and at the disposal sites	RUE "Bel RC "Ecology" (http://www.ecoinfo.by/)	2005-2010, annually
22. Database "Monitoring of chemical pollution of soils"	-	SI "Republican Centre of Radiation Control and Environmental Monitoring" (http://rad.org.by/)	2002-2010, annually
23. The State cadastre of flora of the Republic of Belarus	-	Minprirody (http://minpriroda.by/ru/)	2003-2010, on the ongoing basis (when new data is available)
24. The register of botanical collections	-	Minprirody (http://minpriroda.by/ru/)	2005-2010, annually
25. The register of specially protected natural areas of the Republic of Belarus	-	Minprirody (http://minpriroda.by/ru/)	1998-2010, on the ongoing basis (when new data is available)
26. The state cadastre of forests of the Republic of Belarus	Forests and lands of the forest fund	Forest Management Unitary Enterprise "Belgosles" (http://belgosles.basnet.by/)	2001-2010, annually
27. The state cadastre of fauna of the Republic of Belarus	Game species	RUE "Bel RC "Ecology" (http://www.ecoinfo.by/)	1999-2010, annually
28. Information and research system of rare animal species	-	Minprirody (http://minpriroda.by/ru/)	2008-2010, on the ongoing basis (when new data is available)
29. The state register of observation points of the National Environmental Monitoring System of the Republic of Belarus	-	RUE "Bel RC "Ecology" (http://www.ecoinfo.by/)	1995-2010, annually
30. The state cadastre of subsoil of the Republic of Belarus	Deposits and manifestations of mineral resources	RUE "Belarusian Research Geological Exploration Institution" (http://geology.org.by/)	1934-2010, on the ongoing basis (when new data is available)
31. The state data bank on drilling exploration of the	Boreholes	RUE "Belarusian Research Geological Exploration	1958-2010, on the ongoing

Resource	Additional characteristics of the information resource	Organization that keeps the state information resource	Time interval, updated
Republic of Belarus		Institution" (http://geology.org.by/)	basis (when new data is available)
32. The database of geophysical exploration of the Republic of Belarus	-	Republican Unitary Geological Survey Enterprise "Belgeologiya" (http://www.belgeologiya.by/)	1946-2010, on the ongoing basis (when new data is available)

Annex 4 provides the description of the key information resources.

4.3 "State of Environment" reports and other printed environmental materials

The national report "The State of the Environment of the Republic of Belarus" is published once in four years on the order of the Ministry of Natural Resources and Environmental Protection. The national report provides data that describe the state and trends of atmospheric air, surface waters, flora and fauna according to the international environmental indicators for a period of five years. The last national report covers the period of 2005-2009. The report also describes specialties of the use and conservation of water, land and biological resources of the country; highlights priority areas of the state policy in the sphere of environmental protection including management of the nature protection activity, environmental information, education and enlightenment as well as international cooperation. The report is designed to provide state bodies of administration, scientific and public organizations of the country and foreign partners with objective information about the state of the environment of the Republic of Belarus, natural resources and their protection. The national report "The State of the Environment of the Republic of Belarus" for 2005-2009 is available on the websites of Minpriroda (<http://minpriroda.by/ru/>), and the Main Information and Analytical Centre of the NEMS (<http://www.nsmos.by/>) in Russian and English languages. The Environmental bulletin "The State of Natural Environment of Belarus" is a specialized annual edition, which is published jointly by the National Academy of Sciences of the Republic of Belarus and the Ministry of Natural Resources and Environmental Protection. This information and analytical publication:

- describes the state of the environment in Belarus in the current year;
- analyzes trends in relation to previous years;
- describes the results of monitoring observations;
- considers statistical and dynamic characteristics of the state and use of natural resources of the region;
- examines the degree of environmental transformation affected by economic activity;
- describes the remediation of negative consequences of such impacts and optimization of environmental situation in the Republic of Belarus.

This publication uses processed and analyzed data of the National Environmental Monitoring System, the National Statistical Committee of the Republic of Belarus, as well as materials of the "State Water Cadastre", environmental monitoring of forests and regular observations of forests in industrial centres. The bulletin is developed by the State Scientific Institution "The Institute for Nature Management of the

National Academy of Sciences of Belarus (<http://ecology.basnet.by/>) and is made available on the websites of Minprirody (<http://minpriroda.by/ru/>), the National Academy of Sciences (<http://nasb.gov.by/rus/index.php>) in Russian language. For the period of 2003-2010 the environmental bulletin is available in electronic format.

Information about the state of the environment based on observations conducted within the National Environmental Monitoring System of the Republic of Belarus is produced annually and made available on the website of MIAC of the NEMS (<http://www.nsmos.by/>) by RUE "Bel RC "Ecology" (<http://www.ecoinfo.by/>). This is done according to the Statement on the development and order of the state data fund on the state of the environment and impacts on it and the List of environmental general purpose information subject to mandatory dissemination. This publication documents the main results of observations on the state of ozone layer, vegetation and soil cover, fauna, change in the situation of geophysical and radiation, pollution of atmospheric air, surface and ground waters, as well as data for the objects of local environmental monitoring. The publication of "Results of the NEMS Observations" is available since 2006 until 2010 in Russian language.

Every quarter, RUE "BEL RC "Ecology" develops information bulletins "On Exceeding the Limits of Emissions/Discharge of Pollutants by the Enterprises of Belarus". These bulletins are made available on the website of the MIAC of the NEMS and are based on data from regular inspections of enterprises performed by the laboratories of the SI "Republican Centre of Analytical Control in Environmental Sphere". The regular inspections have to control the compliance of companies with environmental legislation.

The National Statistical Committee of the Republic of Belarus contributes significantly to the dissemination of environmental information. It produces the regular statistical book "The Protection of the Environment in the Republic of Belarus", which contains information on the state of the environment over time, the availability and use of natural resources, specially protected natural areas, environmental expenditure and so on. Information on areas polluted radioactively as the result of the catastrophe at the Chernobyl NPP is presented for the whole Republic in general and then data is broken down for the Oblasts and the city of Minsk. Some indicators are provided for the districts and cities. According to the system of the main environmental indicators of the Republic of Belarus, the book presents information on the protection of atmospheric air, protection and rational use of water, land and forest resources. The state statistical reports developed by the state statistical bodies and official statistical data of the Republican bodies of state power that deal with nature management, environmental control and protection of the environment are used as sources of information for the book. The latest statistical book "The Protection of the Environment in the Republic of Belarus" contains data on the state of the environment and impact of economic activity for the period of 2005-2010. The book is available on the website of the National Statistical Committee of the Republic of Belarus in Russian and English languages.

4.4. Application of environmental indicators

The system of the main environmental indicators of the Republic of Belarus is approved in accordance with the Guidelines on the Application of Environmental Indicators in the countries of Eastern Europe, Caucasus and Central Asia (EECCA) developed by the Committee on Environmental Policy of UNECE in cooperation with the European Environment Agency. The list of approved indicators that describe the

state of the environment in the Republic of Belarus must be used in the development of the state of the environment reports and assessment of the efficiency of Minprirody and its territorial bodies.

Indicators that are part of the system of the main environmental indicators have priority in terms of national and international requirements. They are developed by various bodies of state and include the following groups:

- **Pollution of atmospheric air and depletion of ozone layer** (developed by Belstat (the National Statistical Committee of Belarus, Minprirody);
- Climate change (developed by Minprirody);
- **Water resources** (developed by Minprirody, the Ministry of Housing and Communal Services);
- Biodiversity (developed by Minprirody, Belstat, the State Committee on Property);
- Land resources and soils (developed by the State Committee on Property);
- Agriculture (developed by Belstat and the Ministry of Agriculture and Food);
- Energy (developed by Belstat, the Ministry of Energy);
- Transport (developed by Belstat, the Ministry of Energy);
- **Waste** (developed by Minprirody, the Ministry of Housing and Communal Services)/

The main environmental indicators are available in the forms of state statistical reporting and materials describing the state and dynamics of environmental pollution. These materials are at the disposal of the corresponding Republican bodies of state that deal with the issues of nature management, environmental control and protection of the environment. The list of environmental indicators is presented in Annex 5.

5. INTERNATIONAL ENVIRONMENTAL AGREEMENTS, WHICH THE REPUBLIC OF BELARUS IS A PARTY

The Republic of Belarus is a party to a number of global, regional, international conventions, protocols and agreements. Membership in international environmental agreements (IEAs) contributes to the growth of international recognition and reputation of the country making it possible to:

- participate in the development of regional, European and international plans focusing on the current global environmental challenges;
- receive financial, scientific, methodological and technical aid for the implementation of internal and multilateral projects;
- gain access to modern technologies and represent own developments in the sphere of environmental protection and sustainable use of natural resources;
- actively participate in the international cooperation in the field of provision, exchange and analysis of information related to environmental challenges;
- participate in seminars, meetings of working groups within the framework of conventions, that are of interest to the Republic of Belarus.

Information about participation of the Republic of Belarus in international environmental agreements is given in Table 6.

Table 6 – International environmental agreements signed by the Republic of Belarus

<i>International environmental agreements</i>	<i>Date of signature</i>	<i>Ratification date (Rt), accession date (Ac), approval date (Ap), adoption date (At), date of entry into force (EIF)</i>
Global Agreements		
United Nations Framework Convention on Climate Change (UN FCCC), 09.05.92, New-York www.unfccc.int	14.06.1992	10.04.2000 (Rt) 09.08.2000 (EIF)
Kyoto Protocol to the United Nations Framework Convention on Climate Change, 11.12.1997, Kyoto http://unfccc.int/kyoto_protocol/items/2830.php		26.08.2005 (Ac) 24.10.2005 (EIF)
The Vienna Convention for the Protection of the Ozone Layer, 22.03.1985, Vienna http://montreal-protocol.org/new_site/en/index.php	22.03.1985	23.05.1986 (Rt) 22.09.88 (EIF)
The Montreal Protocol on Substances that Deplete the Ozone Layer to the Vienna Convention for the Protection of the Ozone Layer, 16.09.1987, Montreal http://montreal-protocol.org/new_site/en/index.php	22.01.1988	25.10.1988 (Rt) 01.01.1989 (EIF)
Convention on Biological Diversity, 05.06.1992, Rio de Janeiro http://www.cbd.int/	11.06.1992	10.06.1993 (Rt) 29.12.1993 (EIF)
The Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 15.05.2000, Cartagena http://bch.cbd.int/protocol/		06.05.2002 (Rt) 30.10.2002 (EIF)
The Convention on the International Trade in Endangered Species of Wild Fauna and Flora, 03.03.1973, Washington	20.12.1994	10.08.1995 (Ac) 08.11.1995 (EIF)

International environmental agreements	Date of signature	Ratification date (Rt), accession date (Ac), approval date (Ap), adoption date (At), date of entry into force (EIF)
http://www.cites.org/		
The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat , 02.02.1971, Ramsar http://www.ramsar.org		25.05.1999 (Rt) 10.09.1999 (EIF)
The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 22.03.1989, Basel http://www.basel.int/		16.09.1999 (Ac) 09.03.2000 (EIF)
The Convention on the Conservation of Migratory Species of Wild Animals, 23.06.1979, Bonn http://www.cms.int/		12.03.2003 (Ac) 01.09.2003 (EIF)
UN Convention to Combat Desertification, 17.06.1994, Paris www.unccd.int	17.07.2001	16.08.2001 (Rt) 27.11.2001 (EIF)
The Stockholm Convention on Persistent Organic Pollutants, 23.05.2001, Stockholm http://chm.pops.int		03.02.2004 (Ac)
The Antarctic Treaty, 01.12.1959, Washington http://www.ats.aq/index_r.htm		19.07.2006 (Ac) 27.12.2006 (EIF)
The Protocol on Environmental Protection to the Antarctic Treaty, 04.10.1991, Madrid http://www.ats.aq/r/ep.htm		10.04.2008 (Ac) 15.08.2008 (EIF)
Regional Agreements		
The Convention on Long-range Transboundary Air Pollution, 13.11.1979, Geneva http://www.unece.org/env/lrtap/	14.11.1979	14.05.1980 (Rt) 16.03.1983 (EIF)
The 1984 Geneva Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) 28.09.84, Geneva http://www.unece.org/env/lrtap/emep_h1.html	28.09.1984	06.08.1985 (Rt) 28.01.1988 (EIF)
The 1985 Helsinki Protocol to the Convention on Long-Range Transboundary Air Pollution on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent, 08.07.1985, Helsinki http://www.unece.org/env/lrtap/sulf_h1.html	08.07.1995	18.08.1986 (Rt) 02.09.1987 (EIF)
The 1988 Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes to the Convention on Long-range Transboundary Air Pollution, 31.10.88, Sofia http://www.unece.org/env/lrtap/nitr_h1.html	01.11.1988	24.05.1989 (Rt) 14.02.1991 (EIF)
Convention on Environmental Impact Assessment in a Transboundary Context, 25.02.1991, Espoo http://www.unece.org/env/eia/privet.html	26.02.1991	10.11.2005 (At) 08.02.2006 (EIF)
The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, 25.06.1998, Aarhus http://www.unece.org/env/pp/	16.12.1998	14.12.1999 (Rt) 30.10.2001 (EIF)

International environmental agreements	Date of signature	Ratification date (Rt), accession date (Ac), approval date (Ap), adoption date (At), date of entry into force (EIF)
The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 17.03.1992, Helsinki http://www.unece.org/env/water		29.05.2003 (Ac) 27.08.2003 (EIF)
The Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 17.06.1999, London http://www.unece.org/env/water/text/text_protocol.html		22.04.2009 (Ac)
Sub-regional Agreements		
The Convention on the Protection of the Marine Environment of the Baltic Sea Area, 17.01.2000, Helsinki http://www.helcom.fi/		participates as the observer
Agreement between the Government of the Republic of Belarus, the Government of the Republic of Poland and the Government of Ukraine on the Establishment of the West Polesie Transboundary Biosphere Reserve	28.10.2011	
Bilateral Agreements		
Agreement on Cooperation between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Environmental Protection of Bulgaria on Cooperation in the Sphere of Environmental Protection, Sofia	24.10.1995	24.10.1995
Agreement between the Government of the Republic of Belarus and the Government of the Latvian Republic on Cooperation in the Sphere of Environmental Protection, Minsk	21.02.1994	21.02.1994 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of Belarus and the Ministry of Environment of the Republic of Latvia on Cooperation in the area of protection and sustainable use of transboundary nature protection areas, Braslav	5.05.2010	5.05.2010 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Environmental Protection of the Republic of Lithuania on Cooperation in the Sphere of Environmental Protection, Minsk	14.04.1995	14.04.1995 (EIF)
Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Sphere of Environmental Protection, Smolensk	05.07.1994	05.07.1994 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Natural Resources of the Russian Federation on Cooperation in the Sphere of Subsurface Use, Minsk	14.03.2000	14.03.2000 (EIF)
Agreement between the Government of the Republic of Belarus and the Government of the Russian Federation on Cooperation in the Sphere of Protection and Sustainable Use of Transboundary Water Bodies, Minsk	24.05.2002	25.10.2002 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Environmental Protection of the Republic of Slovakia,	8.07.1997	8.07.1997 (EIF)

International environmental agreements	Date of signature	Ratification date (Rt), accession date (Ac), approval date (Ap), adoption date (At), date of entry into force (EIF)
Bratislava		
Agreement between the Government of the Republic of Belarus and the Government of Ukraine on Cooperation in the Sphere of Environmental Protection, Minsk	16.12.1994	16.12.1994 (EIF)
Agreement between the Government of the Republic of Belarus and the Cabinet of Ministers of Ukraine on Joint Use and Protection of Transboundary Waters, Kiev	16.10.2001	13.06.2002 (EIF)
Memorandum of understanding on issues of cooperation in the sphere of environmental protection between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Environmental Protection of the Republic of Serbia, Belgrade	10.10.2007	10.10.2007 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Ecology and Natural Resources of the Republic of Moldova on cooperation in the sphere of environmental protection and sustainable use of natural resources, Minsk	3.12.2008	2.07.2009 (EIF)
Agreement between the Government of the Republic of Belarus and the Government of the Republic of Poland on cooperation in the sphere of environmental protection, Bialowieza (Poland)	12.09.2009	17.02.2010 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan on cooperation in the sphere of environmental protection	3.06.2010	11.10.2010 (EIF)
Agreement between the Vitebsk Oblast Committee of Natural Resources and Environmental Protection and the State Committee of Environmental Protection of Pskov Region on cooperation in the sphere of environmental protection, Pskov	28.04.1999	28.04.1999 (EIF)
Agreement between the Vitebsk and Mogilyov Oblasts Committees of Natural Resources and Environmental Protection and the State Committee of Environmental Protection of Smolensk Region on cooperation in the sphere of environmental protection, Smolensk	21.12.1998	21.12.1998 (EIF)
Agreement between the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the State Committee of Environmental Protection of Bryansk Region in the sphere of environmental protection and sustainable use of natural resources, Minsk	21.07.1999	21.07.1999 (EIF)
Agreement between the Government of the Republic of Belarus and the Government of Qatar on cooperation in the sphere of exploration, production and processing of mineral resources, Doha	15.08.2011	15.08.2011 (EIF)

In addition, the Republic of Belarus is a participant of seven agreements in the sphere of hydrometeorology and thirteen agreements of the CIS countries.

5.1. Reporting within the framework of global IEAs

The Republic of Belarus is a participant of a number of global conventions and protocols to them. In pursuance of the commitments undertaken under UN FCCC and Kyoto Protocol, the Republic of Belarus submits National Communications to the Secretariat of the Convention in a regular manner. The First National Communication covering the period of 1990 to 2000 was provided by Belarus in 2003, the Fourth National Communication was submitted in 2006 (2003-2005). The last, Fifth National Communication contains the results of UN FCCC and Kyoto Protocol implementation in the period from 2006 to 2009. It includes information on national circumstances, summarized data on the inventory of emissions and sink points of greenhouse gasses in the following sectors: energy sector, industry, agriculture, change of land use and forestry, waste. The latest communication also contains policy and measures for reduction of greenhouse gas emissions and their estimated rates, assessment of vulnerability and adaptation of the country's national economy to climate change, information about regulatory and legal documents newly adopted in the country, information about the national register of emission reduction units, information about on-going research and developments allowing the reduction of greenhouse gas emissions and prevention of their contribution to climate change. The Fifth National Communication is published on the website of the Convention in Russian and in English languages (http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/4903.php).

In pursuance of the Vienna Convention and the Montreal Protocol, Belarus joined the initiative of informal preliminary informed consent (IPIC) in 2010, which is a voluntary exchange of information about anticipated trade transactions between the bodies of importing and exporting countries responsible for issuance of licenses for ozone-depleting substances. Besides, the Republic of Belarus provides data on the production, import and export of ozone-depleting substances. The data are published on the Convention's website (http://montreal-protocol.org/new_site/en/ozone_data_tools_access.php). Once per two years, the Republic of Belarus provides reports on research, developments, public information and information exchange within the framework of Article 9 of the Montreal Protocol. Additionally, since 1997, the National Science and Research Centre for Monitoring of Ozone Layer of the Belarusian State University has been carrying out instrumental monitoring of the status and trends of ozone layer above the Republic of Belarus. The information is made available on the website (<http://ozone.bsu.by>).

In pursuance of the Convention on Biological Diversity and the Cartagena Protocol on Biosafety, the Republic of Belarus submitted the Fourth National Report to the Convention Secretariat in 2009. The report presents a general overview of the status and trends in the development of various aspects of biodiversity in the Republic of Belarus; analysis of the key factors of the adverse impact on the most important aspects of biodiversity. Also the current status of the national strategies and action plans for biodiversity conservation has been analysed and the review of inclusion or consideration of biodiversity topics at the sectoral and intersectoral levels has been made. The National Report is available in Russian and English languages (<http://www.cbd.int/reports/search/>). The previous National Reports of the Republic of Belarus, the National Strategy for Conservation and Sustainable Use of Biodiversity and the Action Plan for the period of 2011-2020 are available on the website of the Convention.

The Republic of Belarus provides annual and two-year national reports to the Secretariat of the Convention on the International Trade in Endangered Species of Wild Fauna and Flora. The English versions of the reports are available on the website of the Convention (<http://www.cites.org/eng/resources/reports.php>).

Within the framework of the Ramsar Convention on Wetlands of International Importance, the Republic of Belarus regularly submits national reports in line with the requirements of the Convention. The last report was provided in 2011. This report as well as earlier reports are available in English on the website of the Convention (http://www.ramsar.org/cda/en/ramsar-documents-natl-rpts/main/ramsar/1-31-121_4000_0).

In 2011, within the framework of implementation of the Basel Convention the National reports for 2008-2010 were amended and provided to the Secretariat of the Convention. The reports are available in English on the website of the Convention (<http://www.basel.int/Countries/NationalReporting>).

In pursuance of the Convention on the Conservation of Migratory Species of Wild Animals, the Republic of Belarus regularly provides National Reports to the Secretariat of the Convention. The latest National Report was provided in 2011 and is available in English on the website of the Convention (http://www.cms.int/bodies/COP/cop10/national_report/NRs_not_coded.html).

In 2011, the Ministry of Natural Resources and Environmental Protection prepared and provided the report of the Republic of Belarus on measures taken to implement provisions of the Convention to the Secretariat of Stockholm Convention. The report in English is available on the website of the Stockholm Convention (<http://chm.pops.int/Countries/NationalReports/tabid/751/Default.aspx>).

In 2006, the Ministry of Natural Resources and Environmental Protection provided the National Report of the Republic of Belarus on implementation of the UN Convention to Combat Desertification. The report is available in Russian on the website of the Convention (<http://archive.unccd.int/cop/reports/centraleu/centraleusp.php>).

5.2. Reporting within the framework of regional IEAs

In pursuance of the Convention on Long-range Transboundary Air Pollution and three of its Protocols, which the Republic of Belarus is a party, the following reporting is provided:

annual data on emissions of basic and specific pollutants (CO, NO_x, SO₂, VOC, NH₃, general emission of solid particles, PM₁₀, PM_{2.5}, heavy metals, persistent organic pollutants); the information is available in English (<http://www.ceip.at/webdab-emission-database/>);

once per every two years reporting on the strategies and policy in the sphere of atmospheric air protection with the general overview of the status and predictions of pollutants emissions in the atmosphere in the Republic of Belarus, analysis of the main sectors and operation processes impacting emissions of pollutants into the atmosphere, analysis of the current status of the national strategies and action plans for emission reduction; the information is available in English (<http://rod.eionet.europa.eu/obligations/658>);

annual monitoring data on atmospheric air quality and transboundary transfer of pollutants; the information is available in English (http://emep.int/publ/reports/2010/Country_Reports/report_BY.pdf).

The Republic of Belarus implements provisions of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes within the framework of concluded agreements on shared use and protection of transboundary water bodies with neighbouring states (Russia, Ukraine). Belarus and these states regularly exchange hydrological and hydrochemical information, agree upon the regimes for the use of water resources, coordinate flood prevention activities and actions to be taken in cases of emergency and solve issues concerning re-distribution of water resources. In 2010, the Republic of Belarus provided data to the Convention's Secretariat to conduct the Second Assessment of Transboundary Rivers, Lakes and Ground Waters.

The Republic of Belarus regularly prepares National Reports on the implementation of the Aarhus Convention. The latest national report was provided to the Aarhus Convention Compliance Committee in 2011. The recommendations of the Aarhus Convention Compliance Committee in 2011 became an additional impulse for the implementation of measures to improve national legislation and law enforcement practice in the sphere of public access to environmental information, participation in the decision-making process and access to justice on environmental issues.

The Republic of Belarus develops and disseminates environmental information according to the country's obligations under the Convention on Environmental Impact Assessment in a Transboundary Context. In 2011, mandatory international procedures envisaged by the provisions of the Convention were accomplished. These provisions precede the decisions on the location and design of nuclear power station in the Republic of Belarus, construction (expansion) of sand and chalk quarry of Khotislavskoye deposit. The negotiation process on the preparation towards the signature of intergovernmental and interagency agreements with Lithuania, Poland and Ukraine on adherence to the Convention is in progress. The international procedures with Lithuania in respect to the planned construction of the Nemnovskaya hydro power plant on the river Neman have also been accomplished on the territory of the Republic of Belarus. In addition, Belarus participated in the international procedures under this Convention in relation to facilities that could cause adverse effect on the environment of the Republic of Belarus. Cooperation with Lithuania concerns a number of facilities associated with decommissioning of Ignalinskaya nuclear power plant and new (Visaginskaya) nuclear power plant. Public hearings and meetings were organized in Braslavskiy district concerning these facilities. Comments and propositions made by the public were summarized and forwarded to the competent body of Lithuania to finalize design solutions related to the issues raised. Similar work was carried out with Ukraine in respect to the Centralized storage of spent nuclear fuel in the area of the Chernobyl nuclear power plant. Recently, work on the construction of the 3rd and the 4th units of Khmel'nitskaya NPP nuclear power plant have been started. Cooperation with Poland is related to Warsaw-Kukuryki motor road.

In general, the Republic of Belarus fulfils its obligations under the international conventions and agreements. Yet, national communications and reports on implementation of numerous international environmental protection agreements provided to the international organizations are not made available on the website of the Ministry of Natural Resources and Environmental Protection and other competent agencies in Russian. Therefore, they are not readily available to all stakeholders and the general public.

6. STEPS TO INTEGRATE INTO THE SHARED ENVIRONMENTAL INFORMATION SYSTEM

Significant regulatory, methodological, scientific and technical resources are available in the Republic of Belarus for the implementation of the SEIS project. The National Environmental Monitoring System operates in the country: the organizational structure of the NEMS has been developed, principles for the organization of monitoring networks, regulation of observations, structure of environmental information, rules for information receipt and provision to users of various level have been legally formalized. However, it is obvious that the country has to continually improve legislation in the sphere of environmental monitoring and enhance environmental reporting and statistics. Application of the SEIS principles will simplify the collection of environmental information, including information required for reporting within international environmental agreements signed by the country.

Given the information of the previous chapters it is possible to analyze strengths and weaknesses of the current national system of environmental information in the Republic of Belarus (Table 7).

Table 7 – The strengths and weaknesses of the current national system of environmental information in the Republic of Belarus.

	Strengths	Weaknesses
Legislation and organizational structure	The structure of the NEMS is legally developed and well-functioning	Insufficient interaction between various agencies
Monitoring networks and data collection	Availability of the developed monitoring networks, centralized and non-centralized state statistical observations	The systems and methods of data collection are not fully harmonized with international classifications and requirements
Structure of environmental indicators	Priority indicators (group of indicators) are identified	Methodologies and legal bases for some indicators are not sufficiently developed. Tools and further work are needed to ensure their presentation in a user-friendly format
Data storage and information technologies	Availability of specialized information and analytical centre for each type of monitoring	No correlation between the information systems of various agencies. Insufficient development of data processing, storage and exchange technologies
Data processing and analysis	Development of operational and generalized information; analysis of long-term series of observations; comparison of initial data with long-term data; identification of pollution trends and short-term forecasts made.	No systems of data control; internationally recognized mathematical models for data processing and interpretation are not integrated; integrated environmental databases and information systems unified with European approaches not established.
Reporting and dissemination of information	The structure of environmental information subject to	Insufficient visualization of environmental information. Many

	Strengths	Weaknesses
	mandatory dissemination is defined; publically available official publications on the state of the environment.	official national publications (provided to the IEAs secretariats) are not available on the Internet

The Republic of Belarus expresses its readiness and interest to cooperate in the following areas as part of the ENPI-SEIS project:

1. Development of guidelines/methodological document on the development of an integrated and common system for the provision of environmental information and the shared use of data and exchange of information to enable effective management;
2. Assistance in further development of environmental indicators for Belarus and capacity building for the information system of the National Environmental Monitoring System;
3. Improvement of methodologies for the development of analytical information on environmental topics, together with the harmonization of Belarusian methodologies for processing of environmental information and development of analytical reports on the state of the environment with methodologies used by EEA members and cooperating countries;
4. Training of personnel and capacity building in the sphere of monitoring, collection, storage, and analysis of environmental data in priority areas;
5. Integration and application of simulation software to receive environmental information, including collection, combination and processing of monitoring data;
6. Development of a pilot shared system of environmental information within a transboundary nature protection territory (or cross-border river basin).

Annex 1

MAIN INDICATORS MONITORED WITHIN THE NATIONAL ENVIRONMENTAL MONITORING SYSTEM OF THE REPUBLIC OF BELARUS

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
Lands	The Statement on the order of land monitoring within the NEMS of the Republic of Belarus (hereinafter referred to as the RB) and application of its data (Resolution of the Cabinet of Ministers of the RB # 386 as of 28.03.2007) Instruction on the organization of land monitoring" (Resolution of the State Committee on Property of the RB, #68 as of 22.12.2009) TKP 17.13-02-2008 (02120) The order of observations of the chemical pollution of soils (Resolution of Minprirody of the RB #6-T as of 05.11.2008).			
- lands of populated areas	Chemical pollution of soils in populated areas	Once in 4 years	pH; heavy metals - Cd, Zn, Pb, Cu, Ni, Mn; SO ₄ ²⁻ , NO ₃ ⁻ , oil products,	RCRCCEM
	Observations on sides of the roads	Once in 5 years	heavy metals – Cd, Zn, Pb, Cu, Ni, Mn; oil products ,	RCRCCEM
	Background global pollution of soils	Once in 3 years	heavy metals - Cd, Zn, Pb, Cu, Ni, Mn; SO ₄ ²⁻ , NO ₃ ⁻ , DDT	RCRCCEM
- agricultural lands	Pollution of agricultural soils with residual pesticides	Once in 5 years	Organochlorine pesticides	RCRCCEM
	Observation over changes of ameliorated landscapes	Annually	pH, concentration of mobile phosphorous and potassium, concentration of humus, exchangeable magnesium	Laboratory of landscapes of the Belarusian State University (BSU)

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
	Observations of the erosion processes in mineral and peat-bog soils	Annually	Width of soil horizons; granulometric texture of soil horizons; soil pH (pH in KCL); hydrolytic soil acidity; humus content in soils; humus content in mineral soils; moisture content of soil; soil density; productive capacity of soils; outwash of fine soils by solid and liquid discharge. Concentration of mobile phosphorous and potassium.	RUE "The Institute of Soil Studies and Agronomy of the National Academy of Science of Belarus" (hereinafter referred to as "NAS of Belarus")
	Observations of compositional changes of old drained peat bogs	Once in 4 years	Rise of reference points in the geo morphological profile of soil; width of soil horizons; granulometric texture of soil horizons (content of physical clay); pH of soils (pH in KCL); hydrolytic soil acidity; humus content in mineral soils; stock of humus in mineral soils; content of organic matter in peat and post-peat soils; concentration of mobile phosphorous (P205) and potassium (K20) in soils; moisture content of soils; soil density; productive capacity of soils;	RUE "The Institute of Soil Studies and Agronomy of the NAS of Belarus"
	Observations on the concentration of heavy metals in soils and agricultural plants in impact areas of industrial centres of the country;	Once in 4 years	Heavy metals - Cd, Zn, Pb, Cu, Ni, Mn;	RUE "The Institute of Soil Studies and Agronomy of the NAS of Belarus"
- land resources	Types and categories of land and land users	Annually	Territory – thousand hectares	The State Committee on Property and subordinate organizations

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
Surface waters	Statement on the order of surface waters monitoring within the NEMS of the RB and use of its data (Resolution of the Council of Ministers #482 as of 28.04.2004) Rules of surface waters monitoring according to hydrochemical and hydrobiological parameters TKP 17.13-04-2011 (Resolution of Minprirody #18 as of 20.12.2011)			
	Water reservoirs, water courses	Monthly, 7 times a year	Parameters of physical properties and gaseous composition of water (temperature, transparency, suspended particles, dissolved oxygen, pH, electric conductivity)	The Republican Centre of Analytical Control in the Sphere of the Environment Protection
7 times a year		Mineral composition of water and concentration of the main ions (chloride, sulphate, hydrocarbonate, magnesium, calcium, natrium (sodium), potassium ions, mineralization, hardness)		
Monthly		Concentration of organic substances (BOD 5, COD cr, oil products, anionic SASs, phenols (total)). Concentration of biogenic substances (ammonium ion, nitrate ion, nitrite ion, phosphate ion in N equivalent, organic nitrogen by Kjeldahl (TKN), total phosphorous). Concentration of elements (total iron, manganese, copper, zinc, nickel, chromium (total), lead, cadmium)		

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
		3 times a year	Hydrobiological parameters (phytoplankton, zooplankton, phytoperiphyton, macrozoobenthos) – total number and number of the main taxonomic groups, number of taxons in groups, biomass, types and species-indicators	RCRCCEM
Ground waters	Statement on the order of monitoring of ground waters within the NEMS of the RB and use of its data (Resolution of the Cabinet of Ministers of the RB #482 as of 28.04.2004) Instruction on the organization of ground waters monitoring (Resolution of Minprirody of the RB #39 as of 14.06.2006)			
	Ground waters artesian waters	Once every 10 days	Water table	SE "BRGEI"
		Once a year	Qualitative composition: Macro components: pH, hardness, dry residue, Cl ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , HCO ₃ ⁻ , NO ₃ ⁻ , Na ⁺ , K ⁺ , Ca ⁺ , Mg ⁺ , NH ₄ ⁺ , CO ₂ , Fe ⁺⁺ , Fe ⁺⁺⁺ , SiO ₂ ; Micro components : Mo, F, As, Zn, Cu, Pb, Mn, Ra, U, B, Hg, Cd, PO ₄ ³⁻	
Atmospheric air	Statement on the order of atmospheric air monitoring within the NEMS of the RB and application of its data (Resolution of the Council of Ministers of the RB #482 as of 28.04.2004), Instruction on the organization of atmospheric air monitoring (Resolution of Minprirody of the RB #70 as of 07.08.2008).			

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
	atmospheric air	3, 4 times a day and ongoing	Main pollutants: solid particles, sulphur dioxide, carbon oxide, nitrogen dioxide, nitrogen oxide; Specific pollutants: ammonia, acetone, benzol, benzopyrene, phenol, phormaldehyde, solid fluorides, etc.	RCRCCEM
	atmospheric precipitation	Daily	Acidity and components of the major salt composition	RCRCCEM
	snow cover	Once a year	Acidity and components of the major salt composition	RCRCCEM
Ozone layer	Statement on the order of ozone layer monitoring within the NEMS of the RB and application of its data (Resolution of the Ministry of Education of the RB #37 as of 24.05.2004)			
	Total columnar ozone Concentration of ground layer ozone	Daily (every 10 minutes during the daytime)		The National Scientific and Research Centre for Ozone Layer Monitoring (NSRC OLM) of the BSU
	Ozone stratification	Once a week		
	Parameters of aerosols	Daily		Stepanov Institute of Physics of the NAS of Belarus
Flora	Statement on the order of flora monitoring within the NEMS of the RB and application of its data (Resolution of the Council of Ministers of the RB #412 as of 14.04.2004), Methodology of flora monitoring within the NEMS of the RB (Resolution of the Presidium Office of the National Academy of Sciences of the RB #405 as of 27.07.2009).			

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
	Meadow and swamp vegetation and their combinations	Once a year, Once in 3 years	Species composition and productivity of grass cover; fertility of soils; accumulation of heavy metals in vegetation and soil	The Institute of Experimental Botany of the NAS of Belarus
	Aquatic vegetation	Once in 5 years	Composition of species, quantitative characteristics of macrophytes, concentration of heavy metals	The Laboratory of Lake Studies of the BSU
	Protective tree plantations	Once in 5 years	Construction, structure, number of trees, undergrowth, underbush, assessment of protective functions	The Institute of Experimental Botany of the NAS of Belarus
	Green plantations in populated areas	Once in 3 years	Category, number of trees, species of wood, % of trees subject to pests and diseases	The Institute of Experimental Botany of the NAS of Belarus
	Population of the resource forming plant and fungus species	Once in 5 years	Territory, projective cover, productivity, threats	The Institute of Experimental Botany of the NAS of Belarus
	Population of the protected plants and fungus species	Once in 2-5 years	Number, projective cover, abundance, viability, threats	The Institute of Experimental Botany of the NAS of Belarus
Forests	Statement on the order of forest monitoring within the NEMS of the RB and application of its data (Resolution of the Ministry of Forestry of the RB #9 as of 04.05.2007) Instruction on the organization of forest monitoring (Resolution of the Ministry of Forestry of the RB #41 as of 30.12.2008)			
	State of the main forest forming species	Once a year	Defoliation of coniferous and foliage species, concentration of chemical elements in needles and leaves, degree of species damage	Forest management RUE "Belgosles"

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
	Green plantations at the ameliorated lands	Once a year	Water table, undergrowth, underbush	RUE "Belgiproles"
	Forest pathology	Ongoing (May-November)	Focus territories of pests and diseases	SI "Belleszaschita

Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
Fauna	Statement on the order of fauna monitoring within the NEMS of the RB and application of its data (Resolution of the Council of Ministers of the RB #576 as of 17.05.2004) Instruction on the order of fauna monitoring (Resolution of Minprirody of the RB #32 as of 11.04.2008)			
	Game animal species and their habitat	No less than once a year, as well as all year round depending on the methods of fauna monitoring	Composition of species numbers for each specimen Optimal population (hoofed mammals) Density of species population (hoofed mammals) Minimal animal density that allows animal removal Average density of species population (for the total territory of monitoring) Age and sex structure of populations (hoofed mammals) Actual volume of hunting Statistics of animal mortality (hoofed mammals) Total number of inhabited holes (for fox and raccoon dog) and settlements (beavers) Number of lekking grounds (for capercaillie and black grouse) or colonies (fantail snipe, cormorant, grey Heron) Number of birds at lekking grounds and in colonies	The Ministry of Forestry of the RB and subordinate organizations, The Presidential Property Management Directorate and its subordinate nature protection organizations, the Ministry of Emergencies of the RB and its subordinate organizations

	Fish species and their habitats	No less than once a season (in water reservoirs – winter, summer and autumn; watercourse – spring, summer and autumn)	<p>Characteristics of the water body (in the passport of the monitoring point)</p> <p>Parameters that characterize the state of populations subject to fishing, state of their habitat and intensity of fishing:</p> <ul style="list-style-type: none"> - fishery catch by species; - size and age composition for fish species that make over 5% of catch weight or total number of catch <p>Intensity of fishing at the point of monitoring: Data on the state of fishing habitats</p>	The Ministry of Agriculture and Food and its subordinate organizations
	Red Book species and their habitat	No less than once a year, as well as all year round depending on the methods of fauna monitoring.	<p>Information on the population of European bison:</p> <ul style="list-style-type: none"> - numbers, age and sex structure of the population; - mortality during the year. <p>Information on protected species of terricoles:</p> <ul style="list-style-type: none"> - number and density of the population or species groups of brown bear, European lynx and European mink at the point of observations; - information on the registration of European lynx, brown bear and European mink; - characteristics of the population or species groups of badger; - information on the protected species of birds; - information on populations of protected species of terrestrial invertebrates. <p>Information on protected species of aquatic animals and their habitats</p>	The NAS of Belarus, the Presidential Property Management Directorate and its subordinate nature protection organizations, the Ministry of Emergencies and its subordinate organizations, Minprirody and its subordinate organizations, the Ministry of Forestry and its subordinate organizations

	Wild animals protected according to the international agreements of the RB and their habitats	No less than once a year as well as all year round depending on the methods of fauna monitoring	Information on night bats and their habitats Information on the registration of birds	The NAS of Belarus, the Presidential Property Management Directorate and its subordinate nature protection organizations, the Ministry of Emergencies and its subordinate organizations, Minprirody and its subordinate organizations
Geophysical	Statement on the order of geophysical monitoring within the NEMS of the RB and application of its data (Resolution of Minprirody of the RB #412 as of 14.04.2004) Instruction on the organization of geophysical monitoring (Resolution of the Presidium of the National Academy of Sciences #85 as of 15.12.2006)			
	Seismic events of natural and technogenic character	Ongoing	Peculiarities of the seismic regime	The Centre of Geophysical Monitoring of the NAS of Belarus
	Gravitational and geomagnetic fields	Once a year	Incrementation of the gravity field, variations	Institute of Nature Management of the National Academy of Sciences of the RB
Radiation	Statement on the order of radiation monitoring within the NEMS of the RB and application of its data (Resolution of Minprirody of the RB # 576 as of 15.04.2004) Instruction on the organization of radiation monitoring (Resolution of Minprirody of the RB #98 as of 11.11.2008)			
Type of monitoring	Type of observations	Frequency of observations	Controlled parameters	Organization conducting observations
	Atmospheric air	All day round with 3 hour interval	Measurement of the exposure dose of gamma radiation	RRCCEM

	At the reference points	Once a day		
	At the stations	Ongoing	Radioactive fallout from atmosphere, iodine-131	
	at 17 points	Daily	Total beta activity	
	surface waters	Monthly	Concentration of 137Cs and 90Sr	RCRCCEM
	soils	Annually	Vertical distribution of radionuclides of 137Cs and 90Sr	RCRCCEM
Local environmental	Statement on the order of local environmental monitoring within the NEMS and application of its data (Resolution of Minprirody in the RB #64 as of 10.07.2008), Instruction on the organization of local monitoring (Resolution of Minprirody of the RB #9 as of 01.02.2007)			
	Emissions into atmospheric air	Monthly	Main and specific pollutants	User of nature
	Sewage discharge into surface waters	2 times a month	Main and specific pollutants	User of nature
	ground waters	Once in a quarter	Sulphates, chlorides, dry residue, iron, SASs, nitrogen compounds, heavy metals, oil products	User of nature
	lands	No less than once in 3 years	Heavy metals, oil products	User of nature

Annex 2

THE LIST OF TECHNOLOGICAL PROCESSES AND FACILITIES THE EMISSION SOURCES OF WHICH ARE SUBJECT TO COMPULSORY INCLUSION INTO LOCAL ENVIRONMENTAL MONITORING TO CONTROL EMISSIONS OF POLLUTANTS INTO ATMOSPHERIC AIR

(Resolution of Minprirody as of 01.02. 2007 #9)

1. Boiler units and other facilities for fuel incineration with the capacity over 23 MW (20Gcal)
2. Burning and drier kilns for the production of cement, lime, ceramsite and agglomerite
3. Clinker-grinding mill
4. Spray-drying tower for the production of construction materials
5. Incinerator burners for oxidation gas of the bituminous production and tail gases in the production of elementary sulphur
6. Glass-melting furnaces
7. Equipment for chemical polishing of crystal
8. Blast cupola with minimum capacity of 2,5 t/hour and more
9. Electric furnaces for ferrous metals
10. Steel furnace with minimum capacity of 1,0t/hour and more
11. Furnaces for non-ferrous castings with a capacity of 0,5 t/hour and more
12. Core-baking oven
13. Knockout grates
14. Tumble drums of foundry production of ferrous and non-ferrous metals
15. Equipment for core molding with hot fitting out and use of cold hardening mixtures.
16. Excluded
17. Spray booths, coating lines with the consumption of material making 15t/hour and more
18. Pressing and polishing equipment in the production of plywood
19. Polishing and drying equipment in particle board industry
20. Spray drying towers for a product in microbiological production
21. Process furnaces of chemical and petrochemical production
22. Urea prilling towers
23. Neutralizing scrubbers for aquafortis and saltpeter shed
24. Urea absorption and desorption units
25. Aquafortis absorption columns
26. Cyclohexanon absorption towers
27. Carbon monoxide gas treatment plants in the production of cyclohexanone
28. Furnaces and incinerating units of sodium hydrate deoxidization
29. Heat regenerators of catalytic cracking units
30. Magnesium recovery boilers
31. Boilers for high-temperature agent
32. Granulation drying towers
33. Extraction units
34. Drying drums of mineral fertilizers production
35. Ammonia-granulator
36. Neutralizing granulators
37. Spray dryers in chemical and petrochemical production.
38. Contacting apparatus of sulphuric acid workshop

39. Pyrolysis ovens for polyethylene production
40. Absorber devices for monomer production
41. Mercirizers and homogenizers of chemical shops
42. Production of carbon and polymeric materials
43. Waste thermal destruction units
44. Drying drums in the production of common salt
45. P-xylol adsorption units in the production of dimethyl terephthalate
46. Delayed coking units in petrochemical production
47. Units (drying drums) in asphalt production with the capacity of 100 t/hour and more

Annex 3

THE LIST OF INFORMATION CLASSIFIED AS ENVIRONMENTAL INFORMATION

(Resolution of Minprirody # 22 as of 29.05.2003)

1. Atmospheric and climatic resources, including:
 - 1.1. quality of atmospheric air
 - 1.2. state of the ozone layer, ozone depleting substances
 - 1.3. radioactive pollution of atmospheric air
 - 1.4. climatic characteristics
2. Land resources, soils, environmental state of territories, including:
 - 2.1. state of soil cover, anthropogenic impact
 - 2.2. radioactive pollution of soils and their accounting
 - 2.3. use of soils
 - 2.4. ameliorated territories
 - 2.5. environmental state of territories, territorial integrated schemes of environmental protection, urban greening
3. Water resources, including:
 - 3.1. state of surface waters
 - 3.2. drinking water quality
 - 3.3. state of ground waters
 - 3.4. radioactive pollution of surface and ground waters
 - 3.5. use of water resources
4. Flora resources, including:
 - 4.1. resources, state, anthropogenic impact
 - 4.2. forestry
 - 4.3. wetland ecosystems
 - 4.4. radioactive pollution, use and rehabilitation of plant resources
 - 4.5. rare and endangered species, invasive species
5. Fauna resources, including:
 - 5.1. resources, state, anthropogenic impact
 - 5.2. game species of wild animals
 - 5.3. fish resources
 - 5.4. rare and endangered species
6. Specially protected natural areas, including:
 - 6.1. the scheme and lists of specially protected natural areas

- 6.2. state of nature complexes and provision of their conservation
- 6.3. characteristics of natural complexes and objects
- 7. Biological diversity and its components, including genetically modified organisms
- 8. Seismic and geomagnetic events, emergency situations, including:
 - 8.1. seismic monitoring
 - 8.2. information on emergency situations of natural and technogenic character
- 9. Waste management, including:
 - 9.1. generation, processing and disposal of waste
 - 9.2. characteristics of waste neutralization and waste disposal facilities
- 10. State of geological environment, impact of the extraction and use of mineral resources
- 11. People's health, including:
 - 11.1. impact of environmental factors on people's health
 - 11.2. physical factors (noise, irradiation), impact
 - 11.3. control of the quality of consumer goods
 - 11.4. radioactive pollution of products (control, prevention of use)
- 12. Safety, living conditions of people, state of cultural objects, buildings to an extent to which the state of environmental components is or may influence them
- 13. Reports of the EIA of planned economic or other activity
- 14. The state cadastres of natural resources, data of environmental monitoring, statistical data
- 15. Databases on the state of natural environment in various sectors of economy
- 16. Ecological certification for compliance with the requirements of international certificates ISO 14 000 including:
 - 16.1. list of enterprises that hold an ecological certificate
 - 16.2. list of enterprises that have the right to mark their products with an "ecologically clean" label
- 17. Environmental policy and state regulation of nature management and environmental protection, including:
 - 17.1. international agreements, legislation of the Republic of Belarus in the sphere of environmental protection
 - 17.2. the state standards, norms and rules in the sphere of environmental protection
 - 17.3. norms of the quality of the environment, technological norms in the sphere of environmental protection
 - 17.4. environmental national plans and programmes
 - 17.5. economic instruments to regulate nature use and protection of the environment from pollution and other forms of degradation
 - 17.6. environmental expenditure
 - 17.7. international cooperation, technical and consultation aid
 - 17.8. engagement of environmental non-governmental organizations
 - 17.9. environmental upbringing, enlightenment and education
 - 17.10. nature conservation and resource saving technologies
 - 17.11. environmental research and developments
- 18. Other information that refers to environmental information according to the Convention on Access to Information, Public Participation in the Decision-making Process and Access to Justice in Environmental Matters approved by the Decree of the President of the Republic of Belarus #726 as of 14.12.2009.

THE DESCRIPTION OF THE MAIN INFORMATION RESOURCES

1. *The state cadastre of atmospheric air*

Registration certificate: №: 1870900677 as of 04.09.2009

Legal and reference information; climatic characteristics and data on the air quality of cities; information on emissions of pollutants (including in the breakdown by substances) from stationary and mobile sources; data on the national emissions of the main pollutants, solid particles, heavy metals and persistent organic pollutants according to the Geneva Convention on Long-range Transboundary Air Pollution

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2009

Time period covered: 1990-2010

Update period: annually

Holder: RUE "Bel RC "Ecology"

<http://www.ecoinfo.by/>

2. *The state climatic cadastre*

Registration certificate: №: 0870100021 as of 31.10.2001

Long-term average values of weather parameters (air temperature, atmospheric pressure, speed and direction of wind, amount of atmospheric precipitation, etc) over a certain observation period: day, month, year (climatic norms); extreme values of the mentioned observations of weather parameters over a certain period: day, month, year; average and extreme dates of weather events; frequency of weather events or values of meteorological parameters.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1998

Time period covered: 1881-2010

Update period: annually

Holder: SI "The Republican Hydrometeorological Centre"

<http://hmc.by/>

3. *The cadastre of anthropogenic emissions and sources of greenhouse gases*

Registration certificate: №: 1871101164 as of 27.01.2011

The Cadastre of anthropogenic emissions from sources and absorption by greenhouse gases sinks. Input data on sources emitting greenhouse gases over the period of 1900-2010, calculation of the emissions of green house gases.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1995

Time period covered: 1990-2010

Update period: annually

Holder: "The Republican Hydrometeorological Centre"

<http://hmc.by/>

4. *Database "Pavetra"*

Registration certificate: №: 1870400335 as of 25.11.2004

Database of observations of the pollution of atmospheric air in the cities of the country; data on the state of atmospheric air in the cities of the Republic of Belarus according to the data of discrete observations at the air monitoring points.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1998

Time period covered: 1996-2010

Update period: monthly

Holder: **SI "The Republican Centre of Radiation Control and Environmental Monitoring"**

<http://rad.org.by/>

5. Database "ASPavetra"

Registration certificate: 1871202459 as of 06.02.2012

Data on the state of atmospheric air based on the results of ongoing measurements at the automated stations

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2010

Time period covered: 2007-2010

Update period: daily

Holder: **SI "The Republican Centre of Radiation Control and Environmental Monitoring"**

<http://rad.org.by/>

6. Database "Apadki"

Registration certificate: №: 1870500401 as of 11.11.2005.

Database on the chemical composition of atmospheric precipitation and snow cover in the Republic of Belarus. Data on chemical composition of atmospheric precipitation (monthly samples), daily samples data at the Vysokoye, transboundary monitoring station, data on snow cover.

General information on the information resource:

Type: factual database.

Language: Russian

Year of establishment: 2003

Time period covered: 2001-2010

Update period: monthly

Holder: **SI "The Republican Centre of Radiation Control and Environmental Monitoring"**

<http://rad.org.by/>

7. Database "Radiation Monitoring of Atmospheric Air"

Registration certificate: №: 1870400334 as of 25.11.2004.

Database of radioactive pollution of the ground layer at the observation points of the Republic of Belarus; data on measurements of radioactive fallout and concentration of radioactive aerosols in the ground layer, including the results of spectrometric analysis (Cs137, Sr90, I131, Be7).

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2001

Time period covered: 2001-2010

Update period: monthly

Holder: **SI "The Republican Centre of Radiation Control and Environmental Monitoring"**

<http://rad.org.by/>

8. Database “Monitoring of Atmospheric Air at the Station “Berezinskiy Zapovednik”

Registration certificate: №: 1870800555 as of 10.03.2008

Database of observations of atmospheric air pollution at the background monitoring station “Berezinskiy Zapovednik”. Data on the state of atmospheric air according to the daily samples at the background territory.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1998

Time period covered: 1998-2010

Update period: monthly

Holder: **SI “The Republican Centre of Radiation Control and Environmental Monitoring”**

<http://rad.org.by/>

9. The state water cadastre, generalized data on water resources

Registration certificate: №: 0700900656 as of 23.06.2009

The state water cadastre, interagency base of generalized data on water resources and their application.

It includes generalized data on the resources and hydrometeorological conditions of the river flow generation, quality of surface waters according to the hydrochemical and hydrobiological parameters, predicted exploitable and natural resources of ground waters and explored exploitable reserves of ground waters, regime and quality of ground waters in natural and lightly disturbed conditions, intake and use of water, discharge and treatment of sewage, pollution of rivers with sewage. The data is broken down by the river basins and administrative territories.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2008

Time period covered: 2000-2010

Update period: annually

Holder: **the Ministry of Natural Resources and Environmental Protection of the RB**

<http://minpriroda.by/ru/>

10. The state water cadastre: data on the regime and resources of surface waters

Registration certificate: №: 0870100020 as of 31.10.2001

Information on values of water levels, discharge of water, water temperature, thickness of ice, information on ice phenomena; on water resources generalized for a certain observation period (day, decade, month, year and other periods) for rivers, lakes and water reservoirs.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1998

Time period covered: 1990-2010

Update period: annually

Holder: **SI “The Republican Hydrometeorological Centre” “**

<http://hmc.by/>

11. The state water cadastre: ground waters of the Republic of Belarus

Registration certificate: №: 0870800076 as of 07.03.2008

The State water cadastre – database “Ground Waters of the Republic of Belarus”. It contains data on resources and exploitable reserves of ground waters by Oblasts, river and artesian basins and water-

resource region; registration cards of water intakes; data on sampling at the operational water intakes with approved reserves; passports of ground waters deposits; passports of exploitable and observation wells; data on water table and quality of ground waters in natural and disturbed hydrogeological conditions; cross sections and schemes of the hydrogeological posts; outline maps of water intakes.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2002

Time period covered: 2000-2010

Update period: annually

Holder: **RUE "The Belarusian Scientific and Research Geological Exploration Institute"**

<http://geology.org.by/>

12. The state water cadastre: statistical reporting of water users

Registration certificate: №: 0870800074 as of 07.03.2008

The state water cadastre, section "Use of Water" – database of the state statistical reporting of water users. It contains data on: water intake from water bodies and receipt of water from other water users; use of water, including for various purposes; transfer of water to other users, losses at transportation; water discharge into water bodies and other options (filtration fields, tanks, etc); the limits of water intake (receipt) and discharge; consumption of water in the recurrent and water recycling systems; discharge of pollutants with sewage waters. The source of information for the database is the report on the use of water, form 2-os (water) approved by the Resolution of the Ministry of Statistics №221 as of 26.09.2007.

General information on the information resource:

Type: database

Language: Russian

Year of establishment: 2002

Time period covered: 1990-2010

Update period: annually

Holder: **RUE "The Central Scientific and Research Centre on the Integrated Use of Water"**

<http://www.cricuwr.by/>

13. The state water cadastre: permit for special use of water

Registration certificate: №: 0870800075 as of 07.03.2008

The state water cadastre, section "Use of Water" – database of permits for special use of water. It contains the data on: permitted volumes of water intake from water bodies and receipt of water from other water users; use of water including for various purposes; transfer of water to other users, losses at transportation; water discharge into water objects and outside them (filtration fields, tanks, etc); consumption of water in the recurrent and water recycling systems; permissible concentrations of pollutants discharged into water bodies with sewage.

General information on the information resource:

Type: database

Language: Russian

Year of establishment: 2003

Time period covered: 2003-2010

Update period: ongoing (when the new data is available)

Holder: **RUE "The Central Scientific and Research Centre on the Integrated Use of Water"**

<http://www.cricuwr.by/>

14. Database “Monitoring of Surface Waters according to Hydrochemical Parameters”

Registration certificate: №: 1870400332 as of 23.11.2004

Database of observation of the state of ground waters according to the hydrochemical parameters in the Republic of Belarus

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2003

Time period covered: 1986-2010

Update period: monthly

Holder: **SI “The Republican Centre of Radiation Control and Environmental Monitoring**

<http://rad.org.by>

15. Database “Monitoring of Surface Waters according to Hydrobiological Parameters”

Registration certificate: №: 1870400331 as of 23.11.2004

The database of hydrobiological observations of the state of water systems of the RB (phytoplankton, phytoplankton, zooplankton, macrozoobenthos).

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2003

Time period covered: 1986-2010

Update period: monthly

Holder: **SI “The Republican Centre of Radiation Control and Environmental Monitoring**

<http://rad.org.by>

16. Information database on integrated use and protection of waters of the river basin

Registration certificate: №: 1871202512 as of 13.03.2012

The information database with a special software to develop arrangements for integrated use and conservation of waters of the river basin. It contains information to automate the data development process and make all necessary calculations for the development of arrangements of integrated use and conservation of the river basin. Results of the work could be presented in the form of tables and electronic digital maps presenting the information required for management decisions on the river basin.

General information on the information resource:

Type: database

Language: Russian

Year of establishment: 2009

Time period covered: 1991-2010

Update period: ongoing (when the new data is available)

Holder: **RUE “The Central Scientific and Research Centre on the Integrated Use of Water”**

<http://www.cricuwr.by/>

17. Database “RECONT”

Registration certificate: №: 1870400333 as of 25.11.2004

The database of radioactive pollution of soils and surface waters in the RB

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2003

Time period covered: 1986-2010

Update period: ongoing

Holder: **SI “The Republican Centre of Radiation Control and Environmental Monitoring**

<http://rad.org.by>

18. The state waste cadastre

Registration certificate: №: 1870900679 as of 04.09.2009

Information on the generation, accumulation, storage, disposal, neutralization and processing of industrial waste by types, classes of hazard, facilities of storage, disposal and neutralization of waste and waste processing facilities.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2009

Time period covered: 2009-2010

Update period: annually

Holder: **RUE “Bel RC “Ecology”**

<http://www.ecoinfo.by/>

19. The register of facilities for storage, disposal and neutralization of waste

Registration certificate: №: 1871001011 as of 14.07.2010

Information on the facilities to store, dispose of and neutralize waste: location of facilities, availability of project documentation, characteristics of neutralized, stored and disposed of wastes, characteristics of products received, and impact of the facilities on the environment.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2008

Time period covered: 2008-2010

Update period: monthly

Holder: **RUE “Bel RC “Ecology”**

<http://www.ecoinfo.by/>

20. The register of the waste processing facilities

Registration certificate: №: 1871001012 as of 14.07.2010

Information on waste processing facilities: location, availability of project documentation, characteristics of waste processed, characteristics of products received and affect of the facilities on the environment.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2008

Time period covered: 2008-2010

Update period: monthly

Holder: **RUE “Bel RC “Ecology”**

<http://www.ecoinfo.by/>

21. Database on outdated pesticides and areas polluted with them

Registration certificate: №: 1870800557 as of 13.03.2008

Contains information on the location of warehouses of outdated pesticides, amount per each warehouse, availability of pesticides and mixtures containing POPs; liquidated warehouses- date of liquidation, information on the disposal of pesticides.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2007

Time period covered: 2005-2010

Update period: annually

Holder: RUE "Bel RC "Ecology"

<http://www.ecoinfo.by/>

22. Database "Monitoring of Chemical Pollution of Lands"

Registration certificate: №: 1870700492 as of 05.03.2007

Database of chemical pollution of soils within the monitoring network. Data on the concentration of pollutants in lands (soils) within the reference grid of background global monitoring and monitoring points affected by technogenic impact (agricultural lands, cities, roadsides).

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2005

Time period covered: 2002-2010

Update period: annually

Holder: SI "The Republican Centre of Radiation Control and Environmental Monitoring"

[http://rad.org.by\)](http://rad.org.by/)

23. The State Cadastre of Flora in the Republic of Belarus

Registration certificate: №: 0870800079 as of 27.03.2008 r.

Cadastre books in electronic format that contain information on species composition, stock, state and dissemination of plants; data has been filled in for the Grodno Oblast (other Oblasts of the Republic are in the process of providing their data).

General information on the information resource:

Type: database

Language: Russian

Year of establishment: 2007

Time period covered: 2003-2010

Update period: ongoing

Holder: **the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus**

<http://minpriroda.by/ru/>

24. The register of botanical collections

Registration certificate: №: 0870800073 as of 06.03.2008

The register contains information on the botanical collections of the Republic of Belarus: name, owner, registration number, unit of record, number of units, number of rare and endangered species, date and number of the resolution on inclusion into the register, location, date and number of resolutions on changes and amendments, recognition of a collection as especially valuable and withdrawal of this status, on exclusion of a collection from the register.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2005

Time period covered: 2005-2010

Update period: annually

Holder: **the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus**
<http://minpriroda.by/ru/>

25. The register of specially protected natural areas of the Republic of Belarus

Registration certificate: №: 0870800556 as of 12.03.2008

Contains the list of specially protected natural areas (SPNA) of the Republican and local significance: categories, types, location, territories, dates and numbers of resolutions on their establishment and reformation; electronic documents with short justifications of SPNA announcement.

General information on the information resource:

Type: database

Language: Russian

Year of establishment: 2007

Time period covered: 1998-2010

Update period: ongoing

Holder: **the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus**
<http://minpriroda.by/ru/>

26. The state forest cadastre of the Republic of Belarus

Registration certificate: №: 0040300050 as of 21.03.2003

It contains information on the combination of interdependent legal, economic, environmental and social data on forests and lands of the forest fund of the Republic of Belarus and their cadastral assessment broken down by the administrative and territorial units of the Republic. Objects of the cadastre: forests and lands forming the forest fund of the country.

General information on the information resource:

Type: database

Language: Russian

Year of establishment: 2002

Time period covered: 2001-2010

Update period: annually

Holder: **Forest Management RUE "Belgosles"**
<http://belgosles.basnet.by>

27. The state cadastre of fauna of the Republic of Belarus

Registration certificate: №: 0340800080 as of 10.09.2008

It contains information on game species (population size, density, number of hunted species) in the hunting sectors of the Vitebsk and Gomel Oblasts; period of observations for Vitebsk Oblast makes 1999-2007, Gomel Oblast 2002-2007. Information (such as organizational data, territory of hunting areas and their explications) is presented for 101 hunting entities of various forms of ownership (Vitebsk Oblast – 64 entities, Gomel Oblast – 37 entities) located on the territory of 42 rayons (Vitebsk Oblast – 21 rayon, Gomel Oblast – 21 rayon). Other Oblasts are providing their data.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2005

Time period covered: 1999-2010

Update period: annually

Holder: **RUE "Bel RC "Ecology"**
<http://www.ecoinfo.by/>

28. Information and research system of rare animal species

Registration certificate: №: 1871001050 as of 03.09.2010

Single data storage on the habitats of rare species. A user is able to request data sets and information to define measures required to conserve and restore habitats, make prediction of the state of the population.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2008

Time period covered: 2008-2010

Update period: ongoing

Holder: **the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus**

<http://minpriroda.by/ru>

29. The state register of observation points within the National Environmental Monitoring System of the Republic of Belarus

Registration certificate: №: 1280200167 as of 25.11.2002

Information on the location of observation points by types of monitoring within the NEMS (Oblast, rayon, settlement), registered number, beginning of and frequency of observations, organization that conducts observations.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1998

Time period covered: 1995-2010

Update period: annually

Holder: **RUE "Bel RC "Ecology"**

<http://www.ecoinfo.by/>

30. The state cadastre of subsoil of the Republic of Belarus

Registration certificate: №: 1381000875 as of 02.04.2010

It contains information on the deposits and manifestations of mineral resources, their locations, quantity, quality and other characteristics.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 2008

Time period covered: 1934-2010

Update period: ongoing

Holder: **RUE "Belarusian Scientific and Research Geology Exploration Institute"**

<http://geology.org.by>

31. The state data bank of drilling exploration of the Republic of Belarus

Registration certificate: №: 1371000918 as of 15.06.2010

It contains geological, geophysical, topographic, stratigraphical, bibliographical information on more than 35 000 holes of various applications across the territory of the Republic of Belarus.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1996

Time period covered: 1958-2010

Update period: ongoing

Holder: **BGE RUE "Belgeology"**

<http://belgeologiya.by/>

32. Database of geophysical exploration of the Republic of Belarus

Registration certificate: №: 1371001120 as of 11.11.2010

It contains geological, geophysical, topographic, bibliographic information on geophysical exploration of the territory of the country.

General information on the information resource:

Type: factual database

Language: Russian

Year of establishment: 1988

Time period covered: 1946-2010

Update period: ongoing

Holder: **BGE RUE "Belgeology"**

<http://belgeologiya.by/>

ENVIRONMENTAL INDICATORS OF THE REPUBLIC OF BELARUS

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
<i>A. POLLUTION OF ATMOSPHERIC AIR AND DEPLETION OF OZONE LAYER</i>					
1. Emissions of pollutants into the air	Emissions of sulphur dioxide (SO ₂) Emissions of nitrogen oxides (NO _x) Emissions of carbon oxide (CO) Emissions of non-methane volatile organic compounds	Electric energy oil refining, chemical and petrochemical, housing and communal sector, transport and communications, agriculture, industry	40 23 24 90 12	<i>Main:</i> thousand tons per year <i>additional:</i> thousand tons per thousand km ² of the territory of the country, thousand tons per thousand people thousand tons per bln USD of GDP thousand tons per trn Roubles of GDP	State statistical reporting form 1-os (air) "Report on the Emissions of Pollutants and Carbon Dioxide into Atmospheric Air from Stationary Sources" (developed by Belstat)

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
	Emissions of ammonia (NH ₃), Emissions of solid particles in total, including: PM-10, PM-2,5; emissions of POPs, including PCB; dioxins/furans, polycyclic aromatic hydrocarbons (PAH), emissions of heavy metals (cadmium, lead and mercury)	Electric energy oil refining, chemical and petrochemical, housing and communal sector, transport and communications, agriculture, industry	40 23 24 90 12		Data of the cadastre of atmospheric air (developed by Minprirody)
2. Air quality in urban areas	Number of days during a year with excess concentration of daily/average daily MPC in the break down by substances*:			Days	Data of the NEMS of the Republic of Belarus
	Sulphur dioxide (SO ₂)			Days	
	Solid particles, PM-10			Days	
	Nitrogen dioxide (NO ₂)			Days	
	Percentage of urban population affected by average annual concentrations exceeding hygienic norms in the break down by substances :*				Data of the NEMS of the RB
	Sulphur dioxide (SO ₂)			Percentage of population	
	Solid particles, PM-10			Percentage of population	

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
	nitrogen dioxide (NO ₂)			Percentage of population	
	Absolute values of average annual concentrations of pollutants:*				Data of the NEMS of the RB
	Sulphur dioxide (SO ₂)			mcg/m ³	
	Solid particles, PM-10			mcg/m ³	
	Nitrogen dioxide (NO ₂)			mcg/m ³	
- for cities where measurements are conducted					
3. Consumption of ozone depleting substances (ODS)	Consumption of ozone depleting substances			Conventional tons per year	The instruction on the order on the accounting of consumption and reporting on the ODS management "Report on the activity related to the ODS management", annual, developed by Minprirody
B. CLIMATE CHANGE					
4. Air temperature	Average annual temperature for the country			degrees Centigrade	Data of the climatic cadastre developed by Minprirody
5. Atmospheric precipitation	Annual amount of precipitation for the country			Mm	Data of the climatic cadastre developed by Minprirody
6. Emissions of	Total volume of emissions of greenhouse gases	Energy sector	40	Main: mln tons of CO ₂	Data of the cadastre on greenhouse gases

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
greenhouse gases (GHG)				equivalent <i>additional:</i> mln tons of CO ₂ equivalent per capita, mln tons of CO ₂ equivalent per unit of GDP	(developed by Minprirody)
		Industrial processes			
		Use of solvents and other products			
		agriculture	12		
		waste	90		
	Characteristics of current trends for changes in the anthropogenic emission of GHG			mln tons of CO ₂ equivalent	Data of the cadastre on GHG National Communication (developed by Minprirody)
	Predicted trends for changes in the anthropogenic emission of GHG			mln tons of CO ₂ equivalent	National Communication (developed by Minprirody)
C. WATER RESOURCES					
7. Renewable freshwater resources	Volume of river run-off generated under the natural conditions			mln. m ³ a year	The state water cadastre (developed by Minprirody)

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
	Total volume of river run-off generated under natural conditions exclusively due to atmospheric precipitation on the territory of the country			mln. m ³ a year	The state water cadastre (developed by Minprirody)
	Factual inflow volume from neighbouring countries			mln. m ³ a year	The state water cadastre (developed by Minprirody)
8. Freshwater intake	Total annual intake from surface and ground waters, volume of intake from surface waters, volume of intake from ground waters			mln. m ³ a year	The state water cadastre (developed by Minprirody)
	Total volume of water used by sectors of economy, including the breakdown by the purpose of use (<i>domestic needs, industrial needs, agricultural needs, irrigation, in pond fisheries</i>)	Generation of electric energy, oil refinery, chemical and petrochemical, housing and communal sector, transport, communication, agriculture, industry	40 23 24 90 12	mln. m ³ a year	The state water cadastre (developed by Minprirody)
	Including:				The state water cadastre (developed by Minprirody)
	In percentage to the total volume of renewable freshwater resources of surface and ground waters (index of water management)			%	The state water cadastre (developed by Minprirody)

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
9. Household water consumption per capita	Volume of water used to satisfy domestic and other needs of the population per capita			liters per day per capita	The state water cadastre (developed by Minprirody)
10. Losses of water	Volume and percentage of ground and surface waters lost at transmission (evaporation and water leaks)			mln. m ³ a year %	The state water cadastre (developed by Minprirody)
11. Recursive and recycled use of water	Share of recursive and recycled water in the total volume of water used for industrial needs			%	The state water cadastre (developed by Minprirody)
12. Drinking water quality	Share of samples that does not comply with the norms of the drinking water quality in the total number of samples of drinking water collected from the sources of centralized domestic water supply			%	The Ministry of Public Health
13. Biochemical oxygen demand (BOD) and concentration of nitrogen ammonia in river water	BOD over 5 days			mg O ₂ /l	Data of the NEMS of the RB
	Concentration of ammonium ion (in nitrogen equivalent) in river			mg N(NH ₄ ⁺)/l	Data of the NEMS of the RB
14. Biogenic substances in fresh water	Concentration of phosphate ion (in phosphorous equivalent) in rivers			mg P (PO ₄ ³⁻)/l	Data of the NEMS of the RB

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
	Concentration of nitrate ions in rivers			mg (NO ₃ ⁻)/l	Data of the NEMS of the RB
	Concentration of phosphate ions (in phosphorous equivalent) in lakes			mg P (PO ₄ ³⁻)/l	Data of the NEMS of the RB
	Concentration of organic nitrogen by Kjeldahl in lakes (TKN)			mg N/l	Data of the NEMS of the RB
	Concentration of nitrate ions in ground waters			mg NO ₃ ⁻ /l	Data of the NEMS of the RB
15. Polluted sewage	Share of polluted sewage discharged into water bodies in the total annual volume of sewage in the country			%	The State water cadastre (developed by Minprirody)
D. BIODIVERSITY					
16. Specially protected natural areas (SPNA)	Territory and share of SPNA in the country including the break down by categories (reserves, national parks, zakaznik, monuments of nature), also by IUCN (I-VI)			thousand hectares %	State statistical reporting form 1-lkh (reserve) "Report on reserves and national parks" (developed by Belstat), the register of specially protected natural territories of the RB (developed by Minprirody)
17. Forests and other lands covered with forests	Territory of lands of the forest fund, covered with forests			<i>Main:</i> thousand hectares <i>additional:</i> km ²	Data of the cadastre of forests (developed by the Ministry of Forestry)
	Territory covered with tree and shrubbery vegetation which is not part of the forest fund (other lands covered with forests)			thousand hectare	Data of the cadastre of forests (developed by the Ministry of Forestry)

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
	Correlation between the territory covered by forests to the total territory of the country			%	Data of the cadastre of forests (developed by the Ministry of Forestry)
	<i>Territory of destroyed forests including by the forest fires</i>			<i>ha per year</i>	State statistical reporting form 1-lkh (protection and reproduction of forests) "Report on the reproduction and protection of forests" (developed y Belstat), Data of the cadastre of forests (developed by the Ministry of Forestry)
	<i>Territory of forest restoration, territory of afforestation</i>			<i>hectares a year</i>	State statistical reporting form 1-lkh (protection and reproduction of forests) "Report on the reproduction and protection of forests" (developed y Belstat)
18. Red Book species of wild animals and wild plants in the Republic of Belarus	Number of species of wild animals and plants included into the Red Book of the country (by groups: lichens, fungus, seaweed, bryophytes, vascular plants, invertebrates, cyclostomes, fish, amphibian, reptiles, birds, mammals)			number of species	Data of the NEMS of the RB, state cadastre of fauna, scientific justifications provided by the National Academy of Sciences and other scientific organizations
19. Numbers of the	Numbers of some species of wild animals in the Republic (elk,			thousands of	State statistical reporting

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
resource species of wild animals	deer, boar, roe deer, squirrel, fox, water rat, mink, beaver, capercaillie, black grouse)			animals	form 1-lkh (hunting) "Report on hunting sector", State statistical reporting form 1-lkh (reserve) "Report on reserves and national parks" (developed by Belstat), data of the NEMS of the RB, data of the state cadastre of fauna
E. LAND RESOURCES AND SOILS					
20. Withdrawal of land from productive rotation	For transport infrastructure, building, waste polygons, slime storage and dumps of waste rock			<i>main:</i> thousand hectares a year <i>additional:</i> in % of the total territory of the country	State statistical reporting form 2-tp (re-cultivation) "Report on land re-cultivation, removal and use of fertile layer of soil" (developed by the State Committee on Property), the form of the agency report 22-zem "Report on availability and allocation of land" (developed by the State Committee on Property)
21. Rayons liable to soil erosion	Total area of land			Thousand hectares in % of the total territory of the	Information of the State Committee on Property once in 5-10 years when conducting soil

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
				country	examination
	Share of agricultural lands subject to degradation, including by types of erosion: wind, water			% of the total territory of agricultural lands	Information of the Institute of Soil Studies once in 15-20 years to conduct soil examination (agricultural lands)
D. AGRICULTURE					
22. Application of mineral and organic fertilizers	Amount of mineral and organic fertilizers per unit of cultivated land and perennial plantings			Kg/hectare - for mineral fertilizers T/hectare – for organic fertilizers	State statistical reporting form 1-skh (fertilizers) “Report on the application of fertilizers and pesticides” (developed by Belstat)
23. Application of pesticides	Amount of pesticides per unit of agricultural lands			kg/hectare	State statistical reporting form 1-skh (fertilizers) “Report on the application of fertilizers and pesticides” (developed by Belstat)
G. ENERGY					
24. Final energy consumption	Total volume of energy consumption supplied to end user for all energy purposes, including by the main indicators:			Thousand tons of oil equivalent	State statistical reporting forms 4-tek (fuel)) “Report on the leftovers, purchase and consumption of fuel”, 1-mp “Report on financial and administrative activity

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
					of a small organization”, 12-tek “Report on the consumption of fuel and energy resources for the production of some products (works) including generation of thermal and electric energy” (developed by Belstat)
25. Total energy consumption	Annual consumption of energy resources in the country and by types of fuel			Thousand tons of oil equivalent	State statistical reporting forms 12-tek (stock of suppliers) “Report on the stock of oil, oil products and natural gas”, 12-tek (stock of consumers) “Report on the stock of fuel”, 1-p (kind) “Report on the production and dispatch of actual production”, 12-ves (goods) “Report on export and import of some products” (developed by Belstat) data of the customs statistics

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
26. Energy intensity	Correlation between the final energy consumption (or total volume of energy consumption) and GDP calculated for the calendar year in constant price terms			Thousand tons of oil equivalent per unit of GDP <i>main:</i> for use in the country – GDP in Belarusian roubles <i>additional:</i> for international comparison – GDP in USD	calculated by Belstat
27. Energy consumption from renewable sources	The share of energy from renewable sources in the total volume of energy consumption for a calendar year			%	calculated by Belstat
H. TRANSPORT					
28. Passenger turnover	Number of passenger transported by various kinds of public transport (taxi, long-distance buses, city buses, trolleybuses, trams, underground, railway, water, naval and air transported) and personal cars multiplied by distance of transportation for the certain year			Thousands of passenger-kilometers (pas-km)	Data based on the state statistical reporting forms on transport (developed by Belstat)
	Share of various kinds of transport in the total volume of passenger turnover			%	

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
29. Cargo turnover	Weight of cargo transported by various types of transport multiplied by the distance of transportation for a particular year			Thousand ton-kilometers (t-km) as the total parameter	Data based on the state statistical reporting forms on transport (developed by Belstat)
	Cargo turnover per unit of GDP			<i>Main:</i> t-km per unit of national currency; <i>Additional:</i> t-km per USD	
	Distribution of cargo turnover by types of transport, i.e. % of various kinds of transport in the total volume of cargo turnover			%	
30. Composition of the fleet of mechanical transport of legal entities in the break down by types of fuel used	Breakdown of the fleet of mechanical transport by types fuel used			<i>main:</i> quantity <i>additionally:</i> percentage ratio between various categories of transport by the type of fuel used to the total number of transport vehicles	
31. Average age of	Average age of the fleet of mechanical transport			Percentage	

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
the fleet of mechanical transport of legal entities				ratio between various categories of transport fleet depending on their age	
I. WASTE					
32. Waste generation	Total volume of waste generation			<i>Main:</i> thousand tons per year <i>Additional:</i> thousand tons a year per unit of GDP, trn Roubles	State statistical reporting form 1-waste (Minprirody) "Report on waste management", agency reporting form 1-sanochistka "Report on sanitary clean up of populated areas" (developed by the Ministry of Housing and Communal Services)
	industrial waste	Industry Construction Trade and Catering Transport and communication forest management housing and		thousand tons a year	State statistical reporting form 1-waste (Minprirody) "Report on waste management" (developed by Minprirody)

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
		communal sector, etc			
	Volume of industrial waste generation excluding halite waste, and halite slime clay-salt, phosphogypsum and lignin hydrolyzed			thousand tons a year	State statistical reporting form 1-waste (Minprirody) "Report on waste management" (developed by Minprirody)
	Volume of hazardous waste generation (classes 1-3)			Thousand tons a year, thousand tons a year per unit of GDP, trn roubles	State statistical reporting form 1-waste (Minprirody) "Report on waste management" (developed by Minprirody)
	Solid household waste			Thousand tons a year (thousand m3 a year) tons a year (m3 a year) per capita	State statistical reporting form 1-sanochistka "Report on sanitary clean up of settlements" (developed by the Ministry of Housing and Communal Services)
33. Transboundary transportation of hazardous waste/transboundary movement of waste)	Volume of export/volume of import			Tons a year	The State Customs Committee Minprirody
34. Index of waste processing	Industrial waste	Industry, construction		%	State statistical reporting form 1-waste (Minprirody)

Group of indicators	Parameter	Provided by type of economic activity		Unit of measurements	Source of data
		Type of economic activity	Code by OKED		
		trade and catering, transport and communications, forest management, housing and communal sector			"Report on waste management"
35. Waste disposal	Volume of disposed industrial waste to the total volume of generation			%	State statistical reporting form 1-waste (Minprirody) "Report on waste management"