

UNECE

# Belarus

## Environmental Performance Reviews

### Third Review - **Highlights**



UNITED NATIONS

## Environmental conditions and pressures

**The economic system is characterized by central government planning and control of most of the domestic economic activity.** Price controls exist for socially important goods and services. The economy is dominated by large, vertically integrated state owned enterprises, which currently account for about 75 to 80 per cent of the gross domestic product (GDP) output and provide a large share of the employment.

**On average, GDP grew 5.6 per cent annually from 2005 to 2013.** However, GDP growth was uneven over the review period. Until 2009, Belarus' economy had a strong 9.6 per cent annual average GDP growth. Since 2009, the annual average growth dropped to 3.2 per cent.

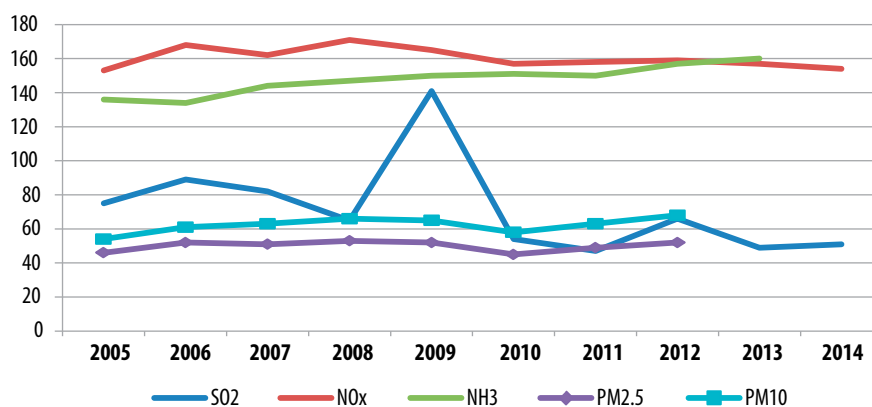
**Sulphur dioxide (SO<sub>2</sub>) emissions contracted over the review period, from 75,000 tons in 2005 to 51,000 tons in 2014 – a decrease of 32.0 per cent.** The amount of SO<sub>2</sub> per capita in 2013 was 5.2 kg, which is less than half of the European Union (EU)'s 2010 average of 11.9 kg. Of the total SO<sub>2</sub> emissions in 2013, 7 per cent came from energy production and 88 per cent from industry.

**Between 2005 and 2013 there was practically no change in the level of nitrogen oxide (NO<sub>x</sub>) emissions.** The three biggest sources of NO<sub>x</sub> emissions in 2013 were road transport (14 per cent of the total), industry (42 per cent) and energy (38 per cent).

**Ammonia (NH<sub>3</sub>) emissions increased by 17.6 per cent, from 136,000 tons in 2005 to 160,000 tons in 2013.** The agricultural sector was the source of 89 per cent of the NH<sub>3</sub> emissions in 2012.

**All heavy metal emissions increased significantly from 2005 to 2012.** Mercury emissions increased the most – by 50 per cent, whereas cadmium emissions increased by 38 per cent and lead emissions by 36 per cent.

Figure 1: Air emissions, 2005–2014, Gg



Source: Ministry of Natural Resources and Environmental Protection, 2015.



**From 2005 to 2013, the total greenhouse gas (GHG) emissions measured in CO<sub>2</sub> equivalent increased by 10.72 per cent, from 84,173.71 Gg to 93,200 Gg.**

The energy sector, which is the largest emitter, producing about 62.45 per cent of all GHGs, has not been able to reduce its emissions since 2005 – in 2013, they amounted to 58,200 Gg. However, the most significant percentage increase took place in the waste sector.

**The total amount of abstracted water, which was 1,705.8 million m<sup>3</sup> in 2005, diminished by 191.6 million m<sup>3</sup> to 1,514.2 million m<sup>3</sup> in 2014.**

This 11.48 per cent drop in water abstraction was mainly caused by the 36.90 per cent decrease in the amount of water provided for drinking and domestic purposes. The per capita water use dropped from 210 litres per day in 2005 to 143 litres per day in 2010 and 137 litres per day in 2014.

**The volume of total wastewater discharges diminished by 18.07 per cent between 2005 and 2014.**

In 2014, the total volume of discharged wastewater was 1,011 million m<sup>3</sup>, of which 931 million m<sup>3</sup> went to surface water bodies while 80 million m<sup>3</sup> was disposed to the irrigated lands, infiltration fields and storage facilities. Of the wastewater discharged into surface waters, one third (31.47 per cent) required no treatment, about two thirds (68.21 per cent) was treated in compliance with appropriate regulations and norms, and a very small portion (0.32 per cent) was not adequately treated to the standards.

**Surface water quality shows a steady, improving trend.** In 2003, the Water Pollution Index showed that 41 per cent of surface waters were relatively clean, 58.4 per cent moderately polluted and 0.6 per cent extremely polluted. In 2013, the combined percentage of clean and relatively clean water had increased to 90.7 per cent, while the amount of moderately polluted water had decreased to 9.3 per cent and no surface water was classified as polluted or extremely polluted.

**The forest area growth rate between 2006 and 2014 was 2.87 per cent.** As of 1 January 2015, forest land covered 8.653 million ha, corresponding to 41.68 per cent of the country's territory.

**The generation of municipal solid waste (MSW) increased by 38.23 per cent, from 2.8 million tons in 2005 to 3.9 million tons in 2013.**

The lack of accurate data and the change of calculation methods from cubic metres to tons might exaggerate the growth rate. Nonetheless, during the same period, per capita MSW grew even more, by 41.24 per cent, reaching 411 kg/capita in 2013.

**Industrial waste generation increased by more than 51 per cent between 2005 and 2014.** The generated amounts in 2005 and 2014 were 38,472 and 52,529 million tons, respectively.

**The management of radioactive pollution from the 1986 Chernobyl NPP accident remains a specific issue.**

As of January 2012, as a result of natural radioactive decay, the area of contaminated lands with a Caesium-137 level of more than 1 Ci/km<sup>2</sup> (37 kBq/m<sup>2</sup>) had decreased to 31,100 km<sup>2</sup> or 14.5 per cent of the land area of the country (from 47,600 km<sup>2</sup> – 23 per cent – of the country's land area in 1986).



## Legal, policy and institutional framework

**Progress has been achieved in the integration of environmental requirements into sectoral legislation and strategic documents.** However the level of such integration differs across sectors and there is scope for stronger integration of environmental requirements in sectoral legislation and planning.

**The country has a developed system of strategic planning, going beyond environmental issues and covering all planning areas, with the National Strategy for Sustainable Socioeconomic Development being at the core of the system.** In the environmental field, strategic planning has been weakened with the discontinuation of national environmental action plans and the approval in 2011 of the Environmental Protection Strategy for the period until 2025 at the level of the Board of the Ministry of Natural Resources and Environmental Protection.

**Green economy principles have been integrated in the National Strategy for Sustainable Socioeconomic Development for the period until 2030.** Use of economic policies and instruments, introduction of green technologies, education for green economy, and science and innovation are among key measures. Practical steps are taken through international projects to raise capacity for implementation of a green economy approach.

**Strategic Environmental Assessment (SEA) is not applied.** At the same time, the prerequisites for introduction of SEA exist and SEA principles and procedures could be effectively integrated into the existing planning process. The country is not a Party to the Protocol on Strategic Environmental Assessment to the Espoo Convention.

**The Millennium Development Goals (MDGs) have a prominent place on Belarus's agenda.** MDG implementation reports have been prepared in 2005 and 2010, and an MDG statistical book was released in 2012. Belarus has been actively involved in the discussions on the post-2015 sustainable development goals (SDGs).

**Although some reorganizations have taken place in the structure of the Ministry of Natural Resources and Environmental Protection, this body operated on a relatively stable basis in recent decades.** Such stability of the national environmental authority, in particular its functioning at the ministerial level, resulted in consistent development and implementation of environmental policies, as well as facilitated the integration of environmental considerations into sectoral policies and legislation.

**Since 2005, the Government has made progress in improving the legal framework for public participation in environmental decision-making.** Public participation in the development of strategic documents and legislation relating to the environment, however, is still not provided for in the legislation.

**The number of legal cases concerning citizens' environmental rights has increased. However, there are still difficulties with access to justice on environmental matters.** Such difficulties include the limited standing of environmental non-governmental organizations (NGOs); high costs of litigation; poor awareness and capacity of judges and prosecutors to handle environmental cases with participation of citizens and environmental NGOs; and other issues.





**Although the requirements for registration of environmental public associations have been eased, the difficulties in their registration remain.**

The requirement for a public association to have an official seat in non-residential premises, the high number of founders needed and the requirements for territorial representation of founders continue to be obstacles for registration.

**The procedures for approval and registration of international funding represent another difficulty for the operation of environmental NGOs, even though these procedures have been relaxed in the past years.**

There are cases when, due to delays or the impossibility of receiving governmental approval, NGOs had to return funding to the donor.

**The situation regarding access to and availability of environmental information and data has improved.**

Still a large amount of environmental information is not available on the websites of relevant public authorities.

**The National Environmental Monitoring System (NEMS) ensures the availability of environmental information to all governmental levels. Since 2014, the National Statistical Committee publishes on its webpage environmental indicators according to the Shared Environmental Information System (SEIS) principles.**

Despite the progress achieved, some issues remain if the country is to be able to fully comply with the principles of SEIS, namely, data flow and protocols for data flow between NEMS' environmental data systems are lacking.

## Recommended measures:

- **Strengthen strategic planning in the environmental field by raising the level of the key strategic documents on environmental protection;**
- **Introduce SEA into national legislation and accede to the Protocol on SEA;**
- **Launch the process to assess the lessons learned from MDG implementation and set up an ambitious national agenda on the basis of SDGs;**
- **Introduce in the legislation procedures for public participation in the development of strategic documents and of legislation relating to the environment;**
- **Bring the legislation into line with the Aarhus Convention regarding access to justice;**
- **Further improve the conditions related to the establishment and operation of environmental NGOs;**
- **Improve the online accessibility of environmental information and data;**
- **Continue working towards the establishment of a shared environmental information system.**

Note: The sections entitled "Recommended measures" represent an abridged version of selected recommendations from the EPR report and are provided for information purposes only. Please consult the text of the report for the full text of recommendations as adopted by the ECE Committee on Environmental Policy.



## Regulatory and compliance assurance mechanisms

**The compliance assurance system has been strengthened over the last decade.** Reforms have been initiated both inside the environmental sector as concerns integrated permitting and outside it as concerns inspection. Still, there is lack of capacity at the lowest level of governance – in rayon and town inspection units.

**The mandate for carrying out state ecological expertise (SEE) was concentrated at the central and oblast levels in order to increase the quality of assessment.** The scope of SEE as concerns industrial and infrastructure projects was harmonized with the scope of environmental impact assessment (EIA).

**There have been improvements in the legal framework for public participation in EIA.** However, in practice, major decisions are still taken without due consideration of public opinion. Post-EIA access to relevant information remains limited. There have been difficulties in the application of EIA in the transboundary context.

**The introduction of integrated environmental permitting has been an achievement.** Nevertheless, its scope does not follow international benchmarks, and resources are not used efficiently leaving potentially dangerous installations not covered by integrated permitting. Public participation is not well embedded within the integrated permitting procedure.

**Discovery of and response to non-compliance have improved, from a procedural perspective. Self-monitoring was further improved.** Strategic goals for compliance assurance, however, have not been established. There are no performance management indicators for the compliance assurance system. Information on environmental inspection, even in aggregated form, is not available to the public.

**Building the legal and institutional framework for the introduction of a national Pollutant Release and Transfer Register (PRTR) is underway.** The list of facilities for inclusion in a PRTR was determined. Belarus is not a Party to the 2003 Protocol on Pollutant Release and Transfer Registers to the Aarhus Convention.

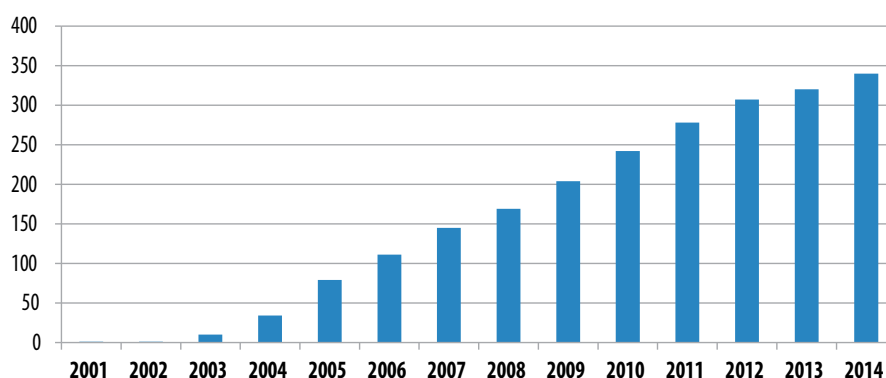
Table 1: Selected standards for effluent quality (municipal wastewater), mg/l

Population Equivalent	COD	BOD5	Suspended solids	Ammonium	N-total	P-total
<= 500	125	35	40			
501 – 2 000	120	30	35	20		
2 001 – 10 000	100	25	30	15		
10 001 – 100 000	80	20	25		20	4.5
> 100 000	70	15	20		15	2.0

Source: TCP 17.06-08-2012, 2012.



**Figure 2: Cumulated number of Belarus enterprises having received STB ISO 14001 certificate, 2001–2014**



Source: Register of the National System of Conformity, State Committee for Standardization (<https://tsouz.belgiss.by/>).

#### BOX 1: PRODUCT STANDARDS

The quality of automobile fuels produced and marketed in Belarus has been subject to systematic improvement during recent years. The quality of the fuel is checked during production and storage and before commercialization. In the period 2009–2012, new national standards for exhaust gases of vehicles were enacted, which were largely harmonized with European and international requirements. On energy efficiency, 129 technical standards and regulations were developed to ensure a comprehensive approach to establishing requirements for energy-consuming products, insulation of buildings, control and metering equipment, production waste reuse and renewable energy sources.

## Recommended measures:

- **Enable the development of inter-rayon inspection units of natural resources and environmental protection;**
- **Further strengthen the EIA/SEE procedures by introducing amendments to the legislation;**
- **Update the scope for integrated permitting by revising the types of installations subject to integrated permitting and their production capacity or output thresholds;**
- **Provide training to industrial operators concerning applications for integrated permits;**
- **Improve public participation in the integrated permitting procedure;**
- **Establish strategic goals and priorities in terms of compliance;**
- **Ensure regular publication of compliance and enforcement data;**
- **Take legislative, institutional and technical measures in order to establish a national PRTR.**



## Economic instruments, environmental expenditure and investments for greening the economy

**A number of reforms of the system of environmental taxes that are imposed on polluting activities were undertaken.** The country also introduced new product charges for dealing with products that are having environmentally harmful effects at the post-consumption stage. In contrast, the changes made to the system of environmental taxes on emissions of air pollutants, discharge of industrial wastewater and the disposal or storage of industrial waste, have been piecemeal and not directed by a coherent concept designed to strengthen their impact on the behaviour of polluters.

**The provision of communal utility services is, with a few minor exceptions, fully operated by state-owned companies.** The role of the private sector is marginal and limited mainly to a single public-private partnership organizing the waste management in the City of Minsk. This points to a potentially large role for private sector participation as a mechanism for improving the provision of communal utility services.

**The tariffs (prices) for the provision of communal utility services have been marked by the distinction between the official full cost recovery tariffs and the much lower tariffs that residential customers actually have to pay.** The counterpart to this has been a combination of cross-subsidies from other customer groups (notably industry) that were significantly above the cost recovery level and/or considerable government subsidies to the utility companies. The Government has started to introduce tariff reforms that aim at gradually raising residential tariffs to cost recovery levels. The challenge is to ensure adequate access of lower income groups to communal utility services.

**In the government sector, nature protection funds played a major role in the financing of environmental expenditure, but they were abolished in 2011.** The large bulk of government budget expenditure is now financed from general revenue, with the exception of some budget organizations, mainly in the forest sector, that can also employ own revenue sources. Overall general government environmental expenditure has, however, been on a marked declining trend, both in real terms (i.e. when adjusted for inflation) and relative to GDP, in recent years.

### BOX 2: GREEN ECONOMY POLICY FRAMEWORK

The 2007 Presidential Directive No. 3 largely inspired the development of legislation and state and sectoral programmes incorporating concrete activities in line with green economy principles. In 2012 the System of Measures to Strengthen Technological Potential of the National Economy to Ensure its Functioning on Environmental (Green) Principles was approved by the Deputy Prime Minister to entrust various governmental institutions with implementation of green economy measures. In 2012, ahead of Rio+20 Conference, the Ministry of Economy prepared a national report, "Sustainable development of the Republic of Belarus based on 'green' economy principles". The report served as a starting point for development of the National Strategy for Sustainable Socioeconomic Development until 2030. The Strategy includes explicit references to green economy principles.





**Table 2: Government budget environmental expenditures, 2005–2014, billion roubles**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Central government	220.0	460.0	538.0	555.0	403.0	243.0	346.0	546.0	536.0	..
Local governments	0.0	0.1	0.1	63.0	136.0	267.0	211.0	317.0	194.0	..
General government	220.0	460.0	538.0	537.0	397.0	496.0	557.0	862.0	730.0	..
Memorandum items										
Intergovernmental transfers	0.0	0.1	0.1	81.0	142.0	14.0	0.0	1.0	0.0	..
Environmental expenditures as per cent of general government expenditures	0.7	1.2	1.2	0.8	0.6	0.7	0.5	0.4	0.3	..
General government environmental expenditures as per cent of GDP	0.3	0.6	0.6	0.4	0.3	0.3	0.2	0.2	0.1	..
Total general government expenditure as per cent of GDP	45.5	47.9	47.9	48.8	46.2	42.1	34.5	38.9	42.1	40.2
Inflation-adjusted general government environmental expenditures (2005=100)	100.0	195.4	210.8	183.3	119.9	139.1	101.9	99.1	70.9	..

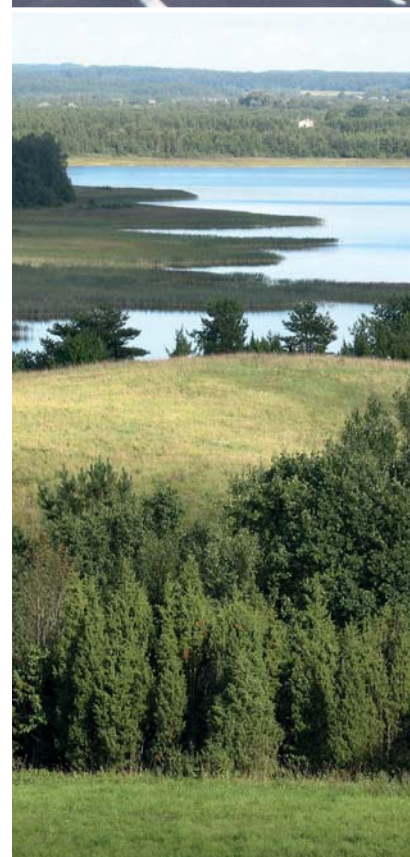
Sources: National Statistical Committee (<http://belstat.gov.by/en/>); Statistical Yearbook, 2014; General government revenue: IMF World Economic Outlook Database, April 2015.

### BOX 3: GOVERNMENT REVENUE FROM ENVIRONMENTAL TAXES

Total government revenue from environmental taxes amounted to some 984.7 billion roubles (€60.9 million) in 2014, up from 325.6 billion roubles in 2010 – an increase by a factor of three. Taking inflation into account, however, the aggregate revenues declined in real terms by some 11 per cent over this period. The bulk of the revenue in 2014 was generated from air pollution taxes (45.1 per cent) and the tax on waste disposal and storage (40.3 per cent); the share of effluent charges was 14.5 per cent. These revenues were fully earmarked for the republican and local nature protection funds, until their abolition at the end of 2011. Since 2011, 40 per cent of the revenues are allocated to the republican budget and 60 per cent to the budgets of the territorial units. The exception is the tax on ODS, which is fully allocated to the republican budget. Aggregate revenues corresponded to 0.3 per cent of general government revenue during the period 2011–2014.

## Recommended measures:

- **Ensure that the system of environmental taxes creates effective incentives for reducing or preventing pollution by adjusting tax rates;**
- **Continue gradually raising tariffs for communal utility services to cost recovery levels;**
- **Develop adequate social support policies to ensure the affordability of communal utility services for low-income households;**
- **Explore the scope for public–private partnership as a mechanism for improving the provision of utility services.**



## Air protection

**Air quality standards are close to EU standards.** Air quality standards for specially protected natural areas were also developed and are, in some cases, more stringent than the EU standards.

**Continuous efforts have been taken to gradually reduce consumption and phase out production of ozone depleting substances (ODS) such as hydrochlorofluorocarbons (HCFC) by 2020, to improve import and export licensing systems of ODS and to ban import and export of substances listed in the Montreal Protocol by the non-Parties.** By 2010, the total HCFC consumption in Belarus was required to decrease to 12.7 metric tons (MT) of Ozone Depleting Potential (ODP). In 2010, 2011 and 2012 Belarus was in compliance with a consumption of 10, 9 and 8 MT ODP, respectively.

**The country is not yet a Party to the amended Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to the Convention on Long-range Transboundary Air Pollution.** The Protocol provides emission limit values (ELVs) for stationary and mobile sources and requires implementation of best available techniques, also for ammonia (NH<sub>3</sub>) control measures in the agricultural sector. Belarus is only partially complying with the ELVs, mostly for NMVOC and NH<sub>3</sub> emissions. Current SO<sub>2</sub> emissions meet the target for the Protocol by 2020, for which Belarus has announced its voluntary commitment. NH<sub>3</sub> emissions have increased in the last 10 years due to the growth of livestock husbandry.

**Belarus is considering accession to the amended protocols on Heavy Metals and on POPs to the Convention on Long-range Transboundary Air Pollution.** However some issues remain, e.g. achievement of the ELVs for lead in the glass industry and for dust in the cement industry.

**There are very few people who use bicycles, although Minsk City is not very hilly and distances are not too great.** The construction of safe paths for bicycles, and other promotion measures, could encourage more people to use this green and healthy form of transport.

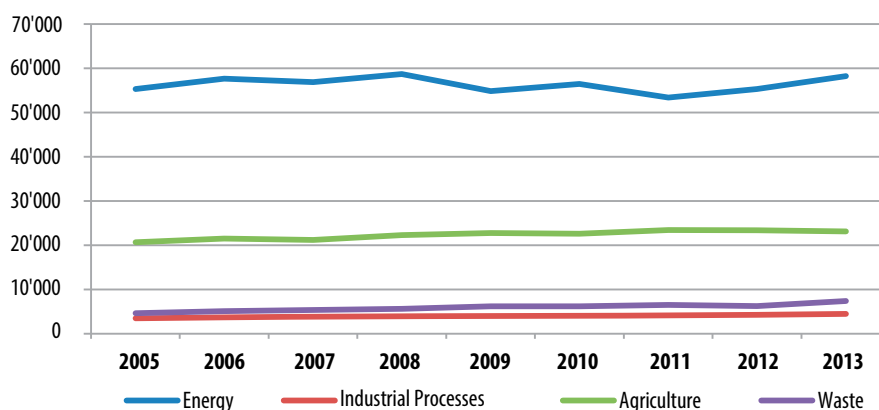
**Table 3: Number of days exceeding the daily average concentration standard for NO<sub>2</sub>, 2010–2013**

Year	Mogilev	Polotsk	Novopolotsk	Minsk City
2010	6	4	1	0
2011	12	0	10	0
2012	10	40	9	1
2013	11	0	21	30

Source: Ministry of Natural Resources and Environmental Protection, Ecological bulletins 2010–2013.



**Figure 3: Sectoral GHG emissions, 2005–2013, Gg of CO<sub>2</sub> equivalent**



Source: Environmental Protection in the Republic of Belarus 2009–2013, Statistical book, National Statistical Committee, 2014.

**Table 4: Number of cows, pigs and poultry and NH<sub>3</sub> emissions, 2005–2014**

Year	Cows x 10 <sup>3</sup>	Pigs x 10 <sup>3</sup>	Poultry x 10 <sup>6</sup>	NH <sub>3</sub> emission kt/y
2005	1 613	3 407	25.1	135
2006	1 565	3 545	28.5	134
2007	1 506	3 642	28.7	144
2008	1 459	3 598	29.4	147
2009	1 452	3 704	31.2	150
2010	1 445	3 782	34.1	151
2011	1 478	3 887	37.5	154
2012	1 477	3 989	39.9	157
2013	1 519	4 243	42.4	160
2014	1 525	3 267	45.7	..

Sources: National Statistical Committee, 2015; S. Kakareka et al. Towards assessment of the emission abatement potential in Belarus against emission targets for 2020, National Academy of Sciences, Minsk, Belarus, 2014.

Note: The data are provided for the beginning of the year.

## Recommended measures:

- Carry out an emissions data inventory of NH<sub>3</sub>;
- Develop a programme for the reduction of emissions of heavy metals, NO<sub>x</sub>, NH<sub>3</sub>, NMVOCs, PM and SO<sub>2</sub>;
- Accede to the three amended protocols to the Convention on Long-range Transboundary Air Pollution;
- Promote the use of bicycles for shorter distances.



## Water management

**The overall water supply and wastewater service coverage is high, and has shown steady growth over the last several years.** In 2014, the coverage of the urban population served by a centralized water supply system reached almost 98 per cent, while centralized sewerage coverage in urban areas was 92 per cent. In rural areas, 29 per cent of the population lack access to centralized water supply systems and 62 per cent are not connected to centralized sewerage. Services are more developed in larger settlements, the so-called “agro-towns”, while in scattered villages and farms the population relies mostly on public or private shallow wells and individual sanitation facilities.

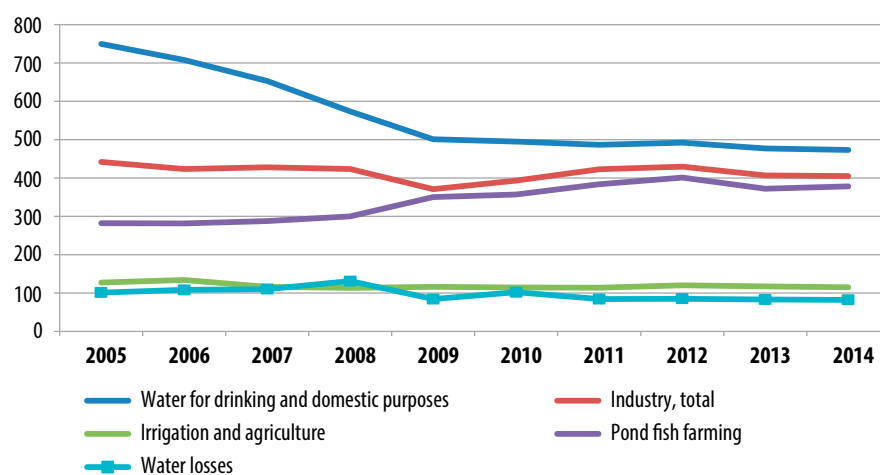
Some measures have been taken to reduce diffuse pollution but so far not much progress has been made. Polluted runoff from cultivated land remains the main source of diffuse pollution of water bodies and groundwater with nitrogen and phosphorus. The methodology for assessing diffuse pollution has not been updated since 1999.

**Pollution load from diffuse sources in residential and industrial areas and cultivated land is a major contributor to contamination of water bodies and shallow groundwater.** Some measures have been taken to reduce diffuse pollution but so far not much progress has been made. Polluted runoff from cultivated land remains the main source of diffuse pollution of water bodies and groundwater with nitrogen and phosphorus. The methodology for assessing diffuse pollution has not been updated since 1999.

**There is no regular monitoring of contaminated sediments,** which are usually accumulated on the bottom of the river sections downstream of large cities and industrial complexes.

**The 2014 Water Code places the river basin management approach at the core of water management policy.** It provides for the preparation of river basin management plans (RBMPs) for the parts of the Dnieper, Pripyat, Neman, Western Dvina and Western Bug river basins located within the territory of Belarus. The draft of the Upper Dnieper RBMP has been prepared. The basin councils to be set up in compliance with the Code will provide an institutional framework for management of river basins with the participation of central, oblast and local authorities, water users and the public.

**Figure 4: Water abstraction and use, 2005–2014, million m<sup>3</sup>**



Source: Environmental Protection in the Republic of Belarus 2010–2014, Statistical book, National Statistical Committee, 2015.

Note: Water loss during transport includes the volume of water lost as a result of filtration, evaporation, leakage and breakdowns in water delivery systems between a point of withdrawal (abstraction) and a point of use or transfer. Losses do not include water transferred to outside users.



**The State Water Cadastre (SWC) is an efficient and indispensable tool for managing the country's water resources.**

In 2015, its functions and scope were updated and expanded. Information about the ecological status of water bodies, inland waterways and hydrotechnical structures will be covered in SWC. However, with its current capacity, such as outdated information and communication technologies and limited human resources, SWC cannot face this challenge.

**BOX 4: WATER-RELATED INDICATORS UNDER GOAL 7 OF THE MILLENNIUM DEVELOPMENT GOALS**

Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

- Indicator 7.5, "Proportion of total water resources used": From 2000 until 2014, Belarus decreased water withdrawn by 17.5 per cent and the water used decreased by 19.2 per cent for the same period. In 2014, the amount of 667 million m<sup>3</sup> was withdrawn from the surface water sources, which accounts for 1.1 per cent of the total annual mean renewable surface water resources estimated at 57,900 million m<sup>3</sup>; the amount of 843 million m<sup>3</sup> was abstracted from the groundwater resources, which accounts for 32.4 per cent of the proven exploitable groundwater resources of 2,600 million m<sup>3</sup>.

Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

- Indicator 7.8, "Proportion of population using an improved drinking water source": Belarus has almost reached the goal of the universal coverage of its urban population with drinking water from improved sources. As of 1 January 2015, 97.7 per cent of its urban dwellers were supplied through piped connections by centralized water systems. The country has also made significant progress in expanding the coverage of its rural population with drinking water supply from improved sources. As of 1 January 2015, 80.7 per cent of its rural population<sup>1)</sup> had access to centralized and local water supply systems.
- Indicator 7.9, "Proportion of population using an improved sanitation facility": Coverage of the urban population served with centralized sewage disposal systems reached 91.9 per cent as of 1 January 2015. In rural areas<sup>1)</sup>, 37.9 per cent of the population had access to centralized and local sewerage systems as of 1 January 2015.

Note: <sup>1)</sup> Coverage of rural population may refer only to those who reside in agro-towns, where water supply and sanitation services are provided by local utilities reporting to the Ministry of Housing and Utilities.

## Recommended measures:

- **Develop methodologies and regulations for the assessment of polluted diffuse runoff and its impact on water resources;**
- **Develop measures for reducing diffuse pollution;**
- **Assess the impact of contaminated bottom sediments on the quality of surface waters;**
- **Create a river basin council as a pilot project and apply the results to other basins;**
- **Take measures to strengthen technical and human capacities to address the new scope of the SWC and apply SEIS principles to the SWC.**



## Waste management

**Municipal solid waste (MSW) collection services are available to all citizens and organizations.** While in 2005 only about 35 per cent of the urban population received regular waste collection services, 99 per cent of the urban population was serviced in 2014.

**Separate collection of MSW, providing containers for dry (paper, plastics, glass) and for wet (biodegradable) waste, is available in the capital, oblast and rayon centres.** The dry fraction is delivered for sorting and the wet fraction is sent for disposal. The number of containers for separate collection is not sufficient. The country has sufficient capacity to process recyclables separated from municipal waste, but it is reaching its capacity.

**MSW is disposed to mini-dumpsites or to rayon dumpsites.** Mini-dumpsites are used in remote countryside areas, but their number is decreasing: while in 2007 about 4,500 mini-dumpsites were registered, their number decreased to 2,351 in 2014. The rayon dumpsites, currently numbering to 170, are usually equipped with basic machinery, a weighbridge and bottom sealing. The transformation of disposal practice, from small disposal sites to oblast-controlled landfills, is a challenge.

**The current legislation and practice of waste management assumes that the waste collector and operator of a disposal site is the same legal entity.** One of the preconditions for successful modernization of waste management is the division of these two functions into different entities, which would create incentives to build modern landfills, install weighbridges, introduce gate fees and improve data on municipal waste.

**Management of industrial waste is well organized at the level of generation and recovery, but disposal practice is behind international practice, especially for sites storing waste generated in large volumes in the past.** The impact of these sites on the environment is known in the most outstanding cases, but methodology for comparable evaluation of risks is not in place. Rehabilitation of large industrial waste sites may be very costly.

**The 2014 estimate shows that 10,632 tons of obsolete pesticides were identified in the country.** The process started to transfer pesticides from underground sites to above-ground storage facilities and to the special facility for storage, treatment and disposal of hazardous waste, including obsolete pesticide, in Chechersk. This is leading to the reduction of the volume of pesticides stored in unsafe conditions and the number of waste storage facilities. All identified storage facilities for obsolete pesticides are regularly monitored.

Table 5: MSW from settlements, 2005–2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Thousand m <sup>3</sup>	14 058	15 012	14 580	15 946	16 739	17 139	18 380	18 299	19 434	19 967
Thousand tons	2 812	3 049	3 220	3 411	3 615	3 765	3 623	3 640	3 887	3 993
Per capita (kg/capita)	291	317	337	358	380	397	382	385	411	421

Source: National Statistical Committee, 2015.





**A roadmap towards ratification of the Minamata Convention on Mercury was drafted.** No inventory of mercury and products containing mercury was carried out in the health and energy sectors.

**Table 6: Obsolete pesticide management, 2014**

Oblast	Amount of obsolete pesticides and their mixtures (tons)				Number of storage sites	
	Total	Repackaged on-site	Repackaged	Stored underground	Underground	Above ground
Brest	..	..	..	..	0	0
Vitebsk	1 515	550	..	965	3	19
Gomel	6 301	0	3 171	3 130	1	1
Grodno	1 348	1 348	..	..	..	37
Minsk	927	927	..	..	0	69
Mogilev	531	..	..	531	1	0
Total	10 623	2 826	3 171	4 626	5	126

Source: Report on situation in obsolete pesticide management, Ministry of Natural Resources and Environmental Protection, 2014.

**Table 7: Implementation of the State Programme for Collection (Procurement) and Processing of Recyclables, selected years, thousand tons**

	Actually collected in 2008	Actually collected in 2013	Actually collected in 2014	Target set for 2015 in Programme
Paper and cardboard	174.9	284.4	329.4	450.0
Glass	28.0	83.2	122.9	145.0
Plastics	17.1	37.2	47.9	43.0
Textiles	8.8	12.3	12.0	13.0
Used tyres	13.1	37.0	39.6	45.0

Sources: State Programme for Collection (Procurement) and Processing of Recyclables, Ministry of Natural Resources and Environmental Protection, 2013; Vtoroperator, 2014.

## Recommended measures:

- Prepare waste management programmes for all oblasts;
- Prepare a plan to gradually phase-out mini-dumpsites, develop a methodology for risk assessment of these sites and prioritize their rehabilitation;
- Introduce legislative changes to allow waste companies to specialize in collection only or in operation of waste disposal/processing facilities;
- Develop a hotspot list of industrial waste sites and involve international donors in their rehabilitation;
- Carry out an inventory of mercury and products containing mercury and ratify the Minamata Convention on Mercury.



## Biodiversity and protected areas

**The share of specially protected natural areas in total land area of the country increased from 7.7 per cent in 2009 to 8.7 per cent in 2015.** There are four national parks, one nature reserve, 96 preserves of the national importance and 267 preserves of local significance. An integrated monitoring of ecosystems in specially protected natural areas is in place.

Since 2005, the country designated nine new Ramsar sites. National management plans were updated for three bird species (great spotted eagle, great snipe, and aquatic warbler) and developed for three new species (bittern, smew, and roller). Starting from 2015, the ban on spring hunting for waterfowl was introduced in 32 wetland areas.

**Since 2009, the country participated in the programme to create the Emerald Network.** In 2014, the nomination of 16 Belarusian specially protected natural areas for inclusion in the Emerald Network was approved. In 2015, Belarus submitted 64 additional territories for inclusion in the Emerald Network.

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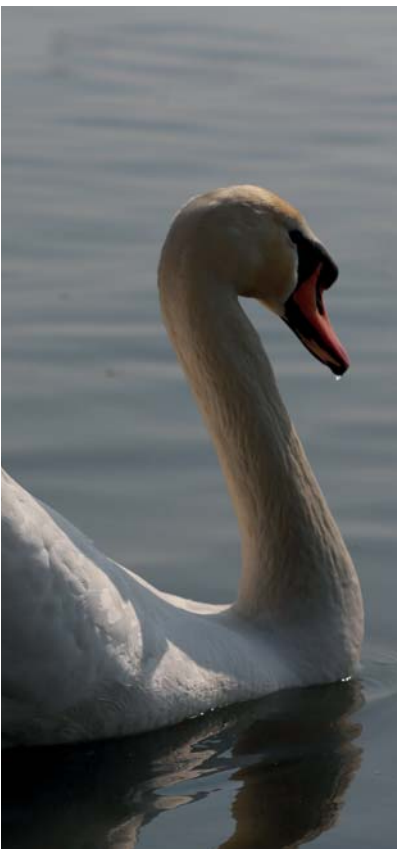
**A national ecological network is not yet established.** The draft scheme of the national ecological network was developed and the legal framework is in place. However some areas that are to become part of the national ecological network are not currently under the protected area system and do not yet have a special status of protection.

**The draining of wetlands is among major anthropogenic factors affecting both the hydrology of water resources and biodiversity.** As of 2014, the area of 2.9 million ha was drained for agricultural purposes.

**One of the main pressures on biodiversity is climate change.** A decrease in the number of areas for boreal species of wild plants has been registered in the northern and eastern regions of the country, while some new species typical of steppe and forest-stepped zones have appeared. The effects also include a decrease in population numbers of some species of wild plants and animals of inundated, riverside and wetland ecosystems.

**In 2011, the country launched a system of monitoring alien and invasive plant species.** As of early 2015, more than 70 permanent observation points have been set up; in addition, a specialized database on the location of the most harmful invasive species is maintained. Action plans to restrict the spreading of invasive Canadian goldenrod, wild cucumber (*Echinocystis lobate*), black locust (*Robinia pseudoacacia*) and American maple (*Acer negundo*) were approved.

**Belarus became a Party to several biodiversity-related international agreements.** In 2013, it acceded, with reservations, to the 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats. In 2014, it acceded to the 2010 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization. In 2015, the country took a decision to accede to the 1995 Agreement on the Conservation of African-Eurasian Migratory Waterbirds (as of 29 October 2015, the instrument of accession is not yet deposited).





### BOX 5: AGRICULTURE, DRAINAGE AND EUTROPHICATION

The species-rich traditional farming systems predominantly found in Belarus until recent years have now made way for intensified agriculture and monoculture. As a consequence, farmland birds have steadily declined. Termination of traditional forms of land use (mowing and grazing) leads to the overgrowth of sedge marshes and river meadows' bushes and reeds, and reduces the number of unique plant and animal species (e.g. aquatic warbler, snipe, curlew, black-tailed godwit, spotted eagle). The draining of wetlands is a major anthropogenic factor affecting not only the hydrology of water resources but also biodiversity.

Agro-industrial activities represent another issue for biodiversity conservation. Water supplied for animal breeding, poultry farming and other agriculture-related activities other than irrigation is taken predominantly from groundwater sources, and then almost fully discharged onto surface water, but loaded with some organic pollutants. Manure that is not properly stored, processed and applied as an organic fertilizer constitutes a considerable source of pollution.

Annually, large-scale industrial pig farms produce 20–22 million tons of wastewater and manure, which are the main cause of eutrophication. Few pig farms have effective systems of manure management and utilization.

**Table 8: Rare and endangered wild fauna and flora species listed in the Red Book of the Republic of Belarus or protected under international treaties to which Belarus is a Party, 2010–2014, number**

	2010	2011	2012	2013	2014
Plants	274	293	293	293	303
Mammals	17	17	17	17	20
Birds	71	71	71	71	70
Reptiles	2	2	2	2	2
Amphibians	2	2	2	2	2
Fish and fish-shaped	10	10	10	10	10

Source: Environmental Protection in the Republic of Belarus 2010–2014, Statistical book, National Statistical Committee, 2015.

## Recommended measures:

- **Design and establish a national ecological network;**
- **Work to progressively reduce the use of the methods of killing, capture and other forms of exploitation with a view to ultimately withdrawing the reservation, or part(s) of it, made at the time of accession to Bern Convention;**
- **Accede to EUROBATS and to Almaty amendment on GMOs to the Aarhus Convention.**



## Energy and environment

### Energy pricing remains inadequate to encourage efficient use of energy.

Market mechanisms for setting energy tariffs are still absent. Electricity remains heavily subsidized for households. There is cross-subsidization between consumer groups (mainly between households and industry). Motivating households to save energy is an important issue to be addressed.

### The first energy service company (ESCO) started operation in early 2005.

However, there are barriers to ESCOs operations, in particular, the legislative basis for the development and operation of an ESCO is not sufficiently developed.

### The 2,400 MW nuclear power plant (NPP) is under construction in Ostrovets, Grodno Oblast.

The first reactor of 1,200 MW is planned to be in operation in 2019, and the second, of the same capacity, in late 2020. The NPP is expected to reduce gas imports by 5 billion m<sup>3</sup> annually. The construction and operation of any NPP can potentially have environmental impacts. It is therefore important to ensure compliance with the international standards of NPP construction and operation in order to reduce environmental and health risks.

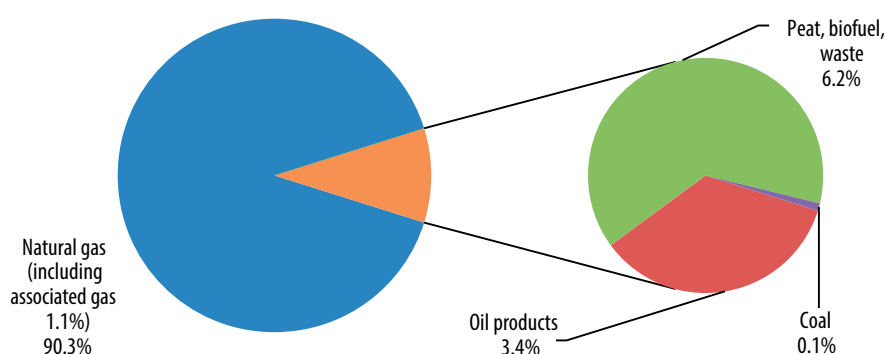
### The share of renewable energy in total energy consumption in the period 2005–2012 increased, with average annual growth of around 4 per cent.

However, currently, only a small proportion of energy comes from renewable resources, as the legislation in this area has been developed only recently and the institutional and technical capacity to develop renewable energy sources is still to be built.

### There is no legislation that supports further development of the national energy system according to market rules.

No law on energy covers all aspects of the energy sector, including production, transport, distribution and consumption, to transform the sector into a competitive market. Government plans to reform the electricity sector by creating a wholesale market have been delayed.

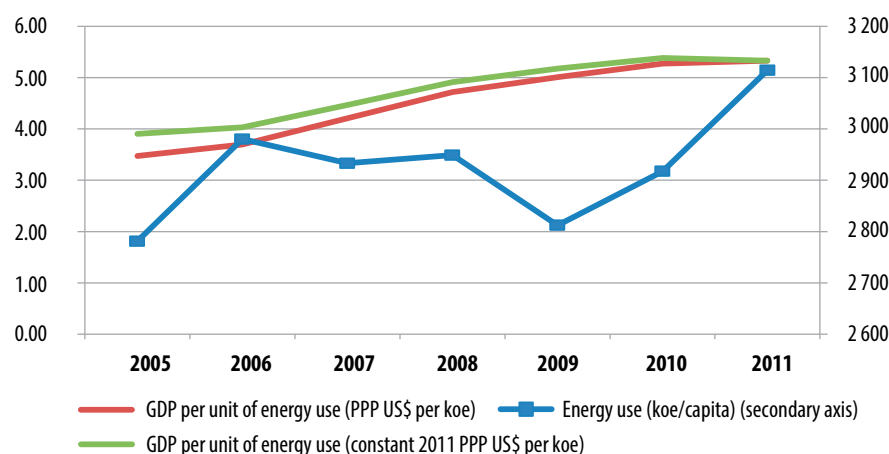
**Figure 5: Structure of fuel used in electricity and heat energy production, 2012, per cent**



Source: <http://www.iea.org/statistics>. Accessed on 1 August 2015.



Figure 6: Energy intensity, 2005-2011



Source: World Development Indicators. Accessed on 14 April 2015.

#### BOX 6: LEGAL FRAMEWORK TO SUPPORT THE DEVELOPMENT OF RENEWABLE ENERGY

The 2010 Law on Renewable Energy Sources (RES) established feed-in tariffs (FITs) for electricity generated from RES and provided for guaranteed connection of certified RES plants to the grid, as well as for a purchase guarantee by the state-owned electricity company (Belenergo) of all electricity produced by these plants. The Ministry of Natural Resources and Environmental Protection administers the certification of RES plants; the issued certificates are valid for a period of 10 years. The Tax Code provides some tax incentives designed to support the development of RES. Imports of equipment used for the production and transfer of RES energy are exempt from VAT. The land used by RES plants is exempt from land tax and there is a reduction coefficient applied to the environmental tax for wastewater discharged by RES plants.

## Recommended measures:

- Restructure electricity tariffs to eliminate cross-subsidies and achieve price levels that reflect the costs of production, while taking measures to protect socially vulnerable groups;
- Improve the framework conditions to facilitate the development and operation of ESCOs;
- Apply IAEA recommendations to reduce environmental and health risks associated with NPP construction and operation;
- Improve the institutional framework in the RES sector;
- Regularly review and keep adequate feed-in tariffs for energy generated from RES;
- Develop and implement a restructuring of the power system with the establishment of wholesale and retail markets.



## Transport and environment

### **The impact of the transport sector on air pollution has stabilized and, in recent years, even reversed.**

Compared with 2009, emissions of air pollutants from transport in 2013 have declined by some 20 per cent, from 1.14 million tons to 0.93 million tons. As a percentage, their share in total air polluting emissions has declined, from 72 per cent in 2005 to 68 per cent in 2014. These developments are significant because they are occurring against the backdrop of a sharp increase in the vehicle fleet.

### **The country has invested in electrifying public transport in major cities.**

At the same time, greening urban transport in this way has not yet resulted in equivalent increases in passenger turnover, with the notable exception of metro passengers in Minsk. There has been a steep rise in the use of metro in Minsk – by more than 31.1 per cent, from around 250 million passengers in 2009 to 328 million passengers in 2013.

**The quality of fuel remarkably improved.** As of January 2015, Euro 5 standard for diesel is applied (sulphur 10 ppm), a quality level to be attained for petrol as of 2016. Currently, the Euro 4 standard for petrol is used (sulphur 50 ppm).

**The urban traffic performance of Minsk is improving through the application of intelligent transportation system (ITS) solutions.** However, the application of ITS solutions to improve the traffic situation and mitigate the negative environmental, health, economic and social impacts of motorized transport is not widely practised.

**The country participates in several transport agreements which are important from an environmental point of view.** However Belarus does not yet participate in the 1993 Protocol to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) and the 2000 European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN).

Table 9: Passenger turnover of urban electric transport, 2005, 2009–2013, million passenger-km

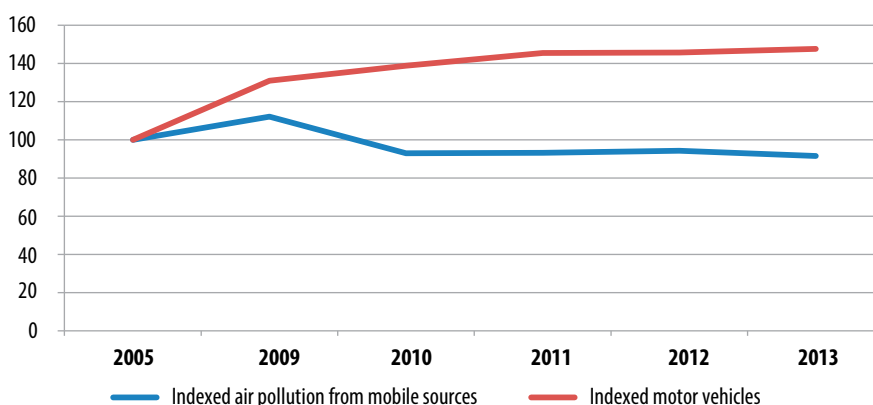
	2005	2009	2010	2011	2012	2013
<b>Total</b>	<b>4 066.4</b>	<b>3 827.5</b>	<b>4 025.1</b>	<b>4 031.9</b>	<b>4 129.6</b>	<b>4 373.1</b>
Tramway	351.4	298.3	301.0	305.6	320.0	300.2
Trolleybus	2 037.1	1 826.0	1 891.1	1 930.6	1 924.4	1 873.4
Metro (Minsk City)	1 677.9	1 703.2	1 833.0	1 795.7	1 885.2	2 199.5

Source: Transport and Communications in the Republic of Belarus, Statistical book, National Statistical Committee, 2014.



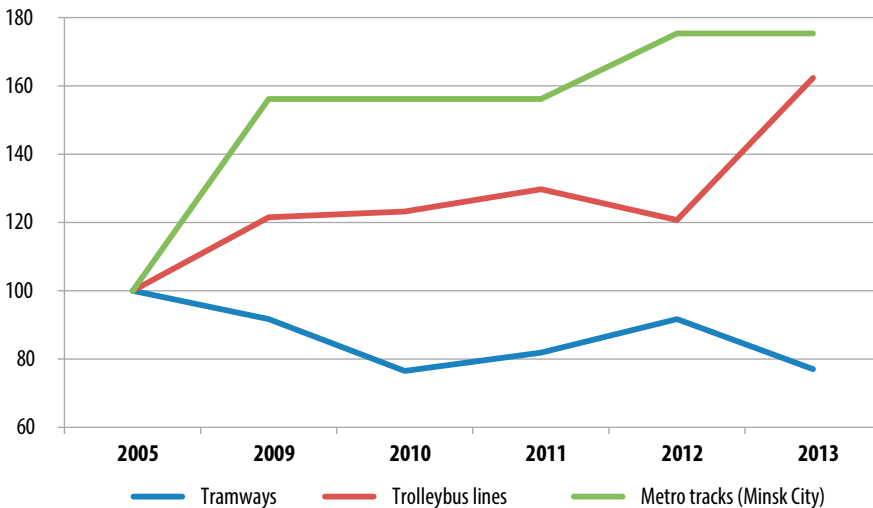


**Figure 7: Decoupling of motorization from air pollution, 2005, 2009–2013, (2005=100)**



Source: ECE Secretariat calculations.

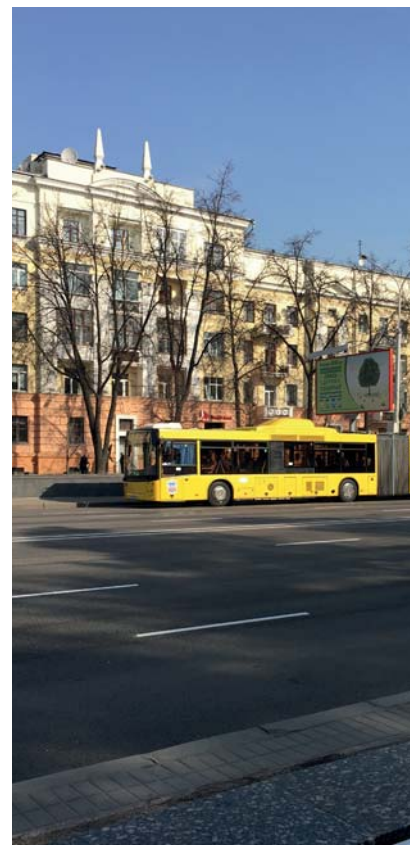
**Figure 8: Development of operating tracks of urban electric transport (in two-way terms), 2005, 2009–2013, (2005=100)**



Source: Transport and Communications in the Republic of Belarus, Statistical book, National Statistical Committee, 2014.

## Recommended measures:

- **Improve the cost recovery of public transport;**
- **Prioritize investments in types of transport where passenger loads justify them and take measures aimed at increasing passenger demand;**
- **Introduce economic incentives to facilitate the renewal of the country's aging fleet;**
- **Continue to deploy ITS solutions in order to improve traffic demand management and mitigate the negative externalities caused by urban transport.**



## Forestry and environment

**Over recent decades, forest rehabilitation and restoration have been very successful in quantitative terms.** But these practices created uneven age structure and species composition in re-established forests. As a result, Belarusian forests are relatively young and without the full genetic stock of old growth forest systems. Young, low diversity forests tend to be less resistant to pests and diseases as well as climate change.

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**The preparation of the second Forestry Development Strategic Plan (2015–2030) and the ongoing revision of the Forest Code were characterized by a wider consultation process than in the past.** Still, the formulation of these key documents for the forestry sector mainly involved institutional actors, and professional forestry and academic communities, and lacked active participation of the private sector, local communities and civil society organisations. Also, the consideration of cross-sectoral aspects such as biodiversity conservation and climate change was insufficient.

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**At present, the economic potential of forests is not fully exploited, and there is large scope for development in terms of increased harvesting on a sustainable basis and processing for export as well as for domestic consumption.** Private sector engagement in timber and non-timber forest products harvesting and processing and other entrepreneurial activities related to reforestation and nurseries is still marginal.

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**The actual timber regulation system results in unequal access to forest resources and advantages forest enterprises over private sector wood processing companies.** Such a form of subsidization may discourage the efficient utilization of forest resources, reduce the financial resources for forest management and cause the misallocation of investment funds.

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**Despite efforts in recent years, the enhancement of the forest road network remains a priority.** Low forest road density can cause an overexploitation of forests close to existing roads, with associated negative environmental impacts.

Low forest road density can cause an overexploitation of forests close to existing roads, with associated negative environmental impacts. Current efforts to enhance the forest road networks are not based on multifunctional construction principles and do not give due consideration to soil erosion, habitat loss and natural landscape impacts.

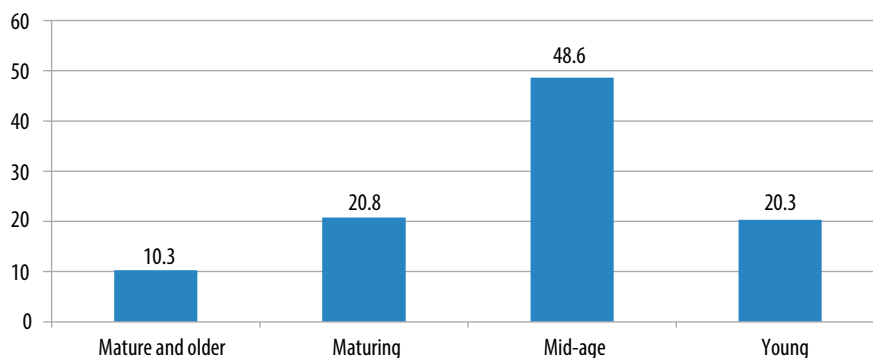
Table 10: Extent of forest area, 2005, 2010, 2014

	Land area (end of year 1 000 ha)			Percentage of land area	Area per inhabitant (ha/inhabitant)
	2005	2010	2014	2014	2014
<b>Total forest fund</b>	<b>9 185.0</b>	<b>9 275.0</b>	<b>9 342.0</b>	<b>45.0</b>	<b>1.0</b>
of which:					
Forest land	8 393.0	8 567.0	8 653.0	42.0	0.9

Source: Form 22-land "Report on the presence and distribution of land", State Property Committee of the Republic of Belarus.

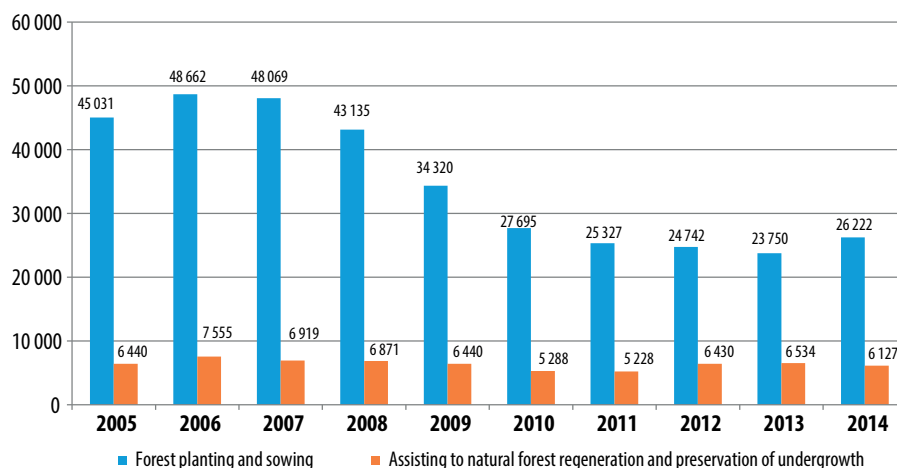


**Figure 9: Composition of forest resources by age, 2014, per cent**



Source: FAO Forest Resource Assessment (FRA) programme 2010/2015, 2015.

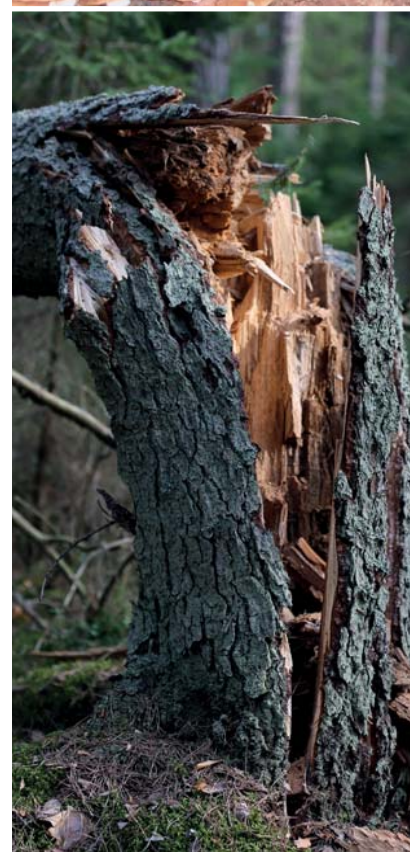
**Figure 10: Reforestation and afforestation, 2005–2014, ha**



Source: National Statistical Committee, 2015.

## Recommended measures:

- Ensure science-based balancing of the ecological, economic and recreation functions of forests to achieve conservation goals;
- Undertake a wide consultation process and take into account cross-sectoral issues, when formulating policy and legal documents for the forestry sector;
- Develop a road map to strengthen the economic potential of forests and enhance the role of the private sector;
- Reform the timber sale method in order to set up a fair, competitive and transparent system;
- Enhance the forest road network based on multifunctional construction principles, paying due consideration to potential environmental impacts.



## Tourism and environment

**Although the total number of collective accommodation facilities in Belarus increased by more than 60 per cent in the period 2005–2014, the number of organized Belarusian tourists travelling abroad still outstrips the number of visitors to Belarus.** In 2014, five Belarusian citizens travelled abroad (six in 2005) for each visit of a foreign tourist to Belarus.

**Agri-ecotourism has been actively developing in the country.** The overall growth of agri-ecotourism entities has significantly escalated: from 34 entities in 2006 to 2,037 in 2014. The number of tourists who used agri-ecotourism services in 2014 was 318,842, 17.3 per cent more than in 2013. Residents of Belarus made up 86.9 per cent of total agri-ecotourists.

**Since 2005, Belarus has become a destination for hunting enthusiasts from abroad.** Hunting companies typically offer three days of hunting for around €1,000. Within the country, not all citizens are willing to pay these kinds of prices. Poaching remains a widespread activity, especially in rural areas.

**Table 11: Statistics on visitors and tourists in Belarus, 2005–2014**

	Number of visits, thousand		Number of tourists *	
	Inbound to Belarus	Outbound from Belarus	Inbound to Belarus	Outbound from Belarus
2005	4 737.8	6 596.3	90 811	572 398
2009	4 871.8	6 439.8	95 463	316 322
2010	5 673.8	7 464.2	120 073	414 735
2011	5 877.2	7 541.6	116 049	319 795
2012	6 127.5	8 426.7	118 749	492 846
2013	6 240.4	8 840.8	136 821	708 376
2014	..	..	137 444	740 514

Source: Tourism and Tourist Resources in the Republic of Belarus 2009–2013, Statistical book, National Statistical Committee, 2014; website of the National Statistical Committee, 2015.

Notes: Data do not include crossings of the Russian Federation–Belarus part of the border nor arrivals and departures for permanent residence.

\* Only tourists who used the services of official tour operators.

**Table 12: Main indicators of agri-ecotourism entities, 2009–2014**

	2009	2010	2011	2012	2013	2014
Number of agri-ecotourism entities	927	1 247	1 576	1 775	1 881	2 037
Tourists accommodated by agri-ecotourism entities	70 001	119 214	144 851	222 566	271 716	318 842
of which:						
residents of Belarus	65 256	108 528	123 435	184 093	234 532	276 995
non-residents	4 745	10 686	21 416	38 473	37 184	41 847
Average duration of stay, days	3	3	7	4	5	4

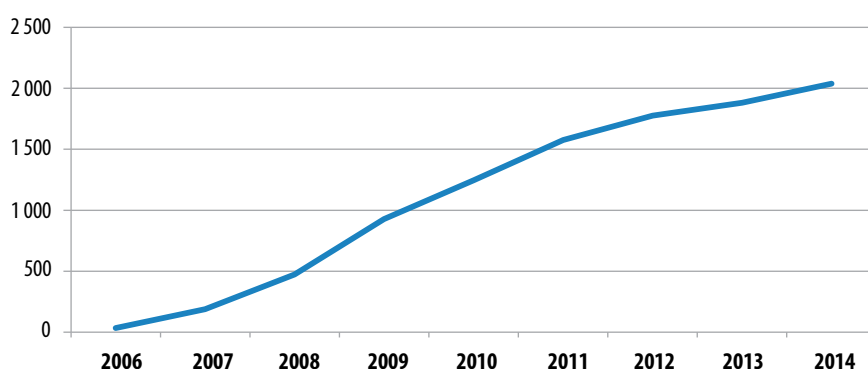
Source: Tourism and Tourist Resources in the Republic of Belarus 2009–2013, Statistical book, National Statistical Committee, 2014; website of the National Statistical Committee, 2015.





**Information is not available on the pressures that tourism puts on the environment.** Neither data nor estimates are available of the pressures that tourism puts on water resources and air. Data on municipal waste generated by the tourism sector are hidden within the total data on municipal waste generated in the country.

**Figure 11: Agri-ecotourism entities, 2006–2014, number**



Source: Tourism and Tourist Resources in the Republic of Belarus 2009–2013, Statistical book, National Statistical Committee, 2014; website of the National Statistical Committee, 2015.

**Table 13: Tourism and the environment in Belarus, 2009–2014**

	2009	2010	2011	2012	2013	2014
Tourist nights, thousands	12 490.5	13 018.2	13 592.1	13 798.2	13 658.2	13 474.5
Direct water consumption, million m <sup>3</sup>	1.9	2.0	2.0	2.1	2.0	2.0
Total water consumption, million m <sup>3</sup>	25.0	26.0	27.2	27.6	27.3	26.9
CO <sub>2</sub> emission, tons	194 851.8	203 083.9	212 036.8	215 251.9	213 067.9	210 202.2
Solid waste generation, thousand tons	25.0	26.0	27.2	27.6	27.3	26.9
Direct and indirect electricity consumption, thousand kWh	124 905.0	130 182.0	135 921.0	137 982.0	136 582.0	134 745.0

Source: ECE Secretariat calculations based on Tourism and Tourist Resources in the Republic of Belarus 2009–2013, Statistical book, National Statistical Committee, 2014, and website of the National Statistical Committee, 2015.

## Recommended measures:

- Study international experience in assessing the impact of the tourism sector on the environment;
- Consider collecting environment-related data on the tourism sector.





## Environmental education and education for sustainable development

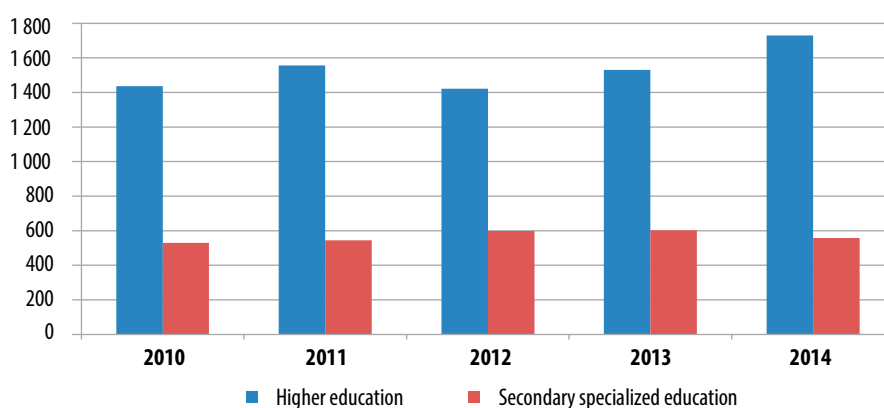
**Progress has been achieved in efforts to integrate environmental education (EE) and education for sustainable development (ESD) elements in formal, non-formal and informal education contexts.** Belarus is also advancing in putting in place legal, policy and institutional frameworks that support EE and ESD. Research and methodological work on ESD is advanced in universities and education institutions, and educators are actively involved in discussions on improving teaching methodology. However, no evaluation of progress in development of EE and ESD, and no assessment of their effectiveness, has been undertaken.

**Although an environmental component largely prevails, there is a noticeable move observed in shifting from environmental to sustainable development topics in the education system.** This shift may be further strengthened to cover a broader spectrum of sustainable development topics (e.g., democracy and governance; peace and human security; sustainable consumption and production; and sustainable urbanization).

**Current in-service training programmes on environmental and sustainable development issues are targeted at civil servants.** There are no such training programmes tailored to private sector professionals.

**The institutional framework that supports EE and ESD at the national level is weak.** The Coordination Centre “Education for Sustainable Development” is not financed by the Government. The interministerial Coordination Council on ESD at the Ministry of Education, established in 2006, has met only two times.

**Figure 12: Number of high education and secondary specialized education graduates on environmental protection and use of natural resources, 2010–2014**



Source: Environmental Protection in the Republic of Belarus 2010–2014, Statistical book, National Statistical Committee, 2015.



### BOX 7: INFORMAL AND NON-FORMAL EDUCATION

For informal environmental education, NGOs, mass media, museums, libraries, natural parks, reserves and botanical gardens play a significant role. Environmental awareness-raising campaigns and events take place extensively, at both national and local levels. It has become a tradition to celebrate World Biodiversity Day, World Car-Free Day and the Earth Hour. In schools, pupils actively take part in eco-theatre, school tree nurseries and eco-marathons. Schools are engaged in recycling, collecting paper and metal waste. In 2004, libraries on sustainable development were opened at the republican and oblast levels.

In early 2015, 32,053 students were taking classes and courses organized by non-formal educational institutions. These institutions organize their activities in 625 ecological education trails, 467 school arboreta, 33 school mini-reserves, 17 greenhouses, 18 biology classrooms (terrarium, aquarium, etc.), 21 nature museums, and other classrooms and laboratories. The educational institution "Republican Centre of Ecology and Local Study" offers a range of educational programmes on energy saving, energy efficiency and environmental protection. At the oblast level, institutes of education development are actively involved in the organization of an annual energy marathon and exhibitions of methodological materials on energy saving.

**Table 14: Training and in-service training of civil servants at the Republican Centre for Advanced Training of Managers and Specialists of the Ministry of Natural Resources and Environmental Protection, 2008–2014, number of trainees**

	2008	2009	2010	2011	2012	2013	2014
Civil servants who attended in-service training							
Total	1 181	968	1 207	1 178	1 007	830	1 080
of which: Ministry	182	155	74	133	146	97	84
Civil servants who attended training seminars	679	1 561	447	1 163	1 280	988	1 069
<b>Total trainees</b>	<b>1 860</b>	<b>2 529</b>	<b>1 654</b>	<b>2 341</b>	<b>2 287</b>	<b>1 818</b>	<b>2 149</b>

Source: Ministry of Natural Resources and Environmental Protection, 2015.

## Recommended measures:

- **Develop criteria and indicators to assess the progress of implementation of EE and ESD and their effectiveness;**
- **Include key sustainable development themes, that are currently not prominently covered, in the curricula and teaching practices on ESD;**
- **Involve private sector professionals in training and update training programmes on sustainable consumption and production, sustainable investment, green procurement and sustainable forestry;**
- **Review the activities and membership of the interministerial Coordination Council on Education for Sustainable Development.**



## Human settlements and environment

**There is a strong tradition of territorial planning in the country and a comprehensive system of territorial plans for the national, oblast and local levels.**

The existing territorial planning approaches, however, do not sufficiently reflect modern, internationally accepted principles of urban planning as an integrative and strategic decision-making process.

**The existing practice on energy saving in the housing sector has mainly focused on improving thermal resistance of walls and other structures.**

Extensive research conducted in the country over the last decade demonstrates the possibility of further reduction in thermal energy consumption through more comprehensive solutions. However, the practical implementation of such measures is constrained by a shortage of the technical norms and standards that would support optimization of integrated energy efficiency of dwellings.

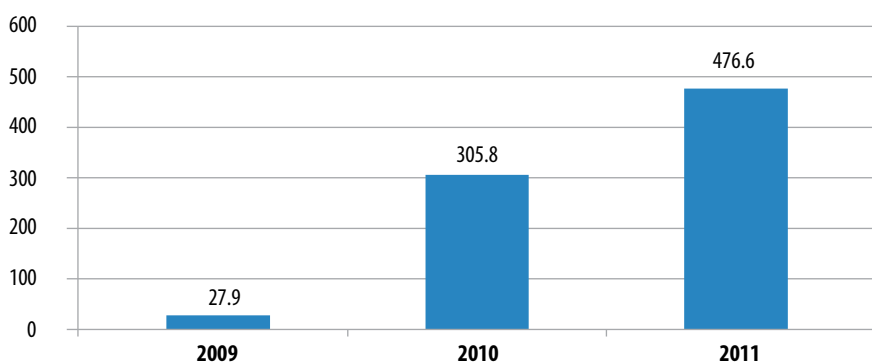
**The provision of green spaces in settlements is regulated by specific technical regulatory legal acts, yet, in practice, the availability of high quality green spaces differs significantly among the settlements.**

There are further possibilities for enhancing green spaces as part of settlements' development programmes, including improving the existing parks and underused/abandoned land, converting the curtilages of residential buildings into recreational green spaces, and road planting.

**In the past decade, the rural settlement system was optimized through establishment of new rural centres – 1,500 agro-towns with improved social services and public amenities.**

At the same time, many other rural settlements have not yet managed to achieve positive changes. Some rural settlements have recently been engaged in the development of their integrated local sustainability plans.

**Figure 13: Energy efficient housing built in Belarus in 2009–2011, thousand m<sup>2</sup>**



Source: Energy efficiency in residential housing: Country dossier Belarus, ARCEE, 2013.



### BOX 8: GREEN SPACES

According to the legislation, green spaces should constitute 30 per cent of the settlement's territory and no less than 25 per cent in residential areas and micro-rayons. In practice, the availability and quality of green spaces differ across settlements. While some settlements may meet or even exceed the legal norm, many cities lag behind considerably. For example, Gomel Oblast has only two cities with green spaces above the statutory level.

Furthermore, settlements' green spaces do not often meet the quality standards, including, for example, for stand structure, species range and tree age. Green spaces in major cities have also come under specific pressure from increased construction, including the curtilages of multifamily houses. Intensified economic and recreational activities within the green belts or zones of cities, especially in peak summer seasons, have certain environmental consequences, including illegal waste dumping, new construction and forest land grabbing for gardening. These problems are related to insufficient regulation of the recreational use of green belts, which is only provided at the level of technical legal acts, as well as poor enforcement of existing regulations.

### BOX 9: GREEN CITY APPROACH TO URBAN DEVELOPMENT FOR SMALL AND MEDIUM-SIZED CITIES

Since 2014, with international support, Belarus has been developing the Project on Green Cities of Belarus – Supporting “Green” Urban Development in Belarus's Small and Medium-sized Cities. This project is expected to last five years and involves three cities (Novogrudok, Novopolotsk and Polotsk) as pilot projects for realizing some elements of a “green city” approach to urban development.

The planned activities will include promotion and introduction of sustainable transport in Novopolotsk and Polotsk, and assistance with increasing energy efficiency in Novogrudok. The results of these projects are expected to provide best practices that will be adopted in at least five other cities in Belarus. The project will also include a proposal for a national plan of green urban development that would consider all aspects in the development of cities resilient to climate change. These aspects include increased energy efficiency, renewable energy and sustainable transport.

## Recommended measures:

- **Develop a pilot project to test the implementation of the 2015 International Guidelines on Urban and Territorial Planning adopted by the UN-Habitat Governing Council;**
- **Elaborate national guidelines for territorial planning;**
- **Apply integrated solutions to further increase the energy efficiency of housing;**
- **Include actions to enhance and protect green spaces and landscape-recreational territories in territorial development plans;**
- **Maintain the integrated development of all rural communities by building on experiences of some rural settlements in the development of local sustainability plans.**



## Health and environment

**Monitoring programmes exist for several environmental health factors such as air quality, food, drinking water and recreational water quality, as well as for radiation.** This monitoring is performed by different ministries and all data collected are published in statistical yearbooks. Statistical analysis of the results are not performed to extract significant tendencies and cross-links between environmental and health results.

**Various ministries take the environment and health into account in their areas of competence.** However, there is no agency or department specifically dedicated to the coordination of health and the environment and to strategy development in this field. There is no national environmental health action plan and no strategic targets on environment and health are defined.

**Indoor air quality is controlled by state sanitary supervision authorities before opening of a new school and after repair works in existing schools.** However no data are available on indoor air pollution in houses, while several factors, such as asbestos, radon, carbon monoxide emission and mould, can be presumed to be present in buildings and have an impact on public health.

**Two enterprises produce asbestos-containing materials but no data on asbestos concentrations in the environment of the surrounding areas are available. Asbestos is still used in building construction and no data on asbestos in houses are available.** Specific diseases related to asbestos are not registered. A comprehensive approach to the reduction of the use of asbestos in the country is lacking.

**With regard to construction of the Belarusian NPP, there is an understanding of the necessity to enhance radiation monitoring and to strengthen a new radiation monitoring programme dedicated to the NPP.** The authorities have to bear the associated costs of the installation such as radiation monitoring, development of safety programmes and emergency action plans, and ensuring the availability of medication (iodine pills).

**Major industries include mechanical and chemical manufacturing; they use hazardous chemicals.** There is insufficient attention to the protection from exposure to hazardous chemicals of workers and of the population living in the vicinity of industrial facilities. Information on the population's exposure to hazardous chemicals in industrial areas is not available. Biomonitoring is performed for workers but only occasionally for the population living in industrial areas.

**Table 15: Domestic and drinking water supply: non-compliance rate of water samples, 2005, 2010–2014**

	2005	2010	2011	2012	2013	2014
Sanitary and chemical parameters						
Samples (1 000)	82.3	126.1	128.0	128.2	135.8	130.4
Non-compliant (%)	32.9	22.3	22.0	20.7	19.3	21.7
Microbiological parameters						
Samples (1 000)	138.3	166.7	170.5	196.9	170.0	164.9
Non-compliant (%)	4.5	2.5	2.0	1.6	1.4	1.9

Source: National Statistical Committee, 2015.





Table 16: MDG health-related indicators

Indicators	Value	Year	Value	Year
Under-five mortality rate (per 1 000 live births)	15.20	1990	4.60	2013
Maternal mortality ratio (per 100,000 live births)	21.80	1990	0.00	2013
Deaths due to HIV/AIDS (per 100 000 population)	0.00	2000	2.70	2012
Deaths due to malaria (per 100 000 population)	0.00	2000	0.00	2012
Deaths due to tuberculosis among HIV-negative people (per 100 000 population)	8.10	2000	9.10	2012

Source: Belarus WHO statistical profile, 2014.

## Recommended measures:

- **Assess the impact of environmental factors on health based on internationally recognized methodologies;**
- **Define strategic targets and actions in the area of environment and health;**
- **Diagnose and register cases of carbon monoxide intoxication and lead and asbestos-related diseases;**
- **Collect information on the use and distribution of asbestos, lead and radon;**
- **Develop and implement measures to reduce the use of asbestos using WHO guidelines, such as a national asbestos programme;**
- **Ensure that the radiation monitoring at the Belarusian NPP is carried out according to international standards and that safety programmes and emergency action plans are adequately financed;**
- **Perform biomonitoring of human health in industrial areas.**

### PHOTO CREDITS

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# Belarus

## Environmental Performance Reviews

### Third Review - Highlights

The United Nations Economic Commission for Europe (ECE) Environmental Performance Review Programme assesses progress made by individual countries in reconciling their economic and social development with environmental protection, as well as in meeting international commitments on environment and sustainable development.

The third Environmental Performance Review of Belarus was carried out in 2015, and recommendations to the country on how it can improve its environmental governance were adopted by the ECE Committee on Environmental Policy in October 2015. The third review examines the progress made by Belarus in the management of its environment since the second review in 2005. It covers policymaking, implementation and the financing of environmental policies, as well as efforts in the area of greening the economy. It addresses air protection, water management, waste management, biodiversity and protected areas and discusses integrating environmental concerns into selected sectors, in particular, energy, transport, forestry, tourism, human settlements and health. The review also assesses the progress made by Belarus in developing environmental education and education for sustainable development. It makes suggestions for strengthening efforts towards a comprehensive and systemic response to sustainable development challenges.

The Highlights of the third Environmental Performance Review of Belarus draw attention to the key findings of the review to inform and guide policymakers and representatives of civil society, as well as the international community, in their efforts to improve environmental management and to further promote sustainable development in Belarus.

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