UNITED NATIONS
ECONOMIC COMMISSION
FOR EUROPE

ENVIRONMENTAL PERFORMANCE REVIEWS

The former Yugoslav Republic of Macedonia highlights

With regard to the environment, over the past decade the country has put an emphasis on updating its legislation and policies to meet European Union (EU) requirements. At the same time, it has acceded to nearly all the important global and regional environmental agreements. Thus for the past 10 years most of the country's already limited financial and human resources have been devoted to making rather than implementing policy. Priority should thus now be given to effective implementation.

Various instruments for environmental management have been introduced in the country since the first Environmental Performance Review in 2002. These include environmental impact assessment, strategic environmental assessment, integrated pollution prevention and control, prevention and control of major accidents involving hazardous substances and environmental monitoring systems.

In addition, the number of stations under the State Automatic Monitoring System for Air Quality increased from 4 to 15. However, the number of air quality stations in the country remains insufficient, further modernization of water monitoring stations is necessary and a lake monitoring programme has yet to be adopted. Moreover, there is a general lack of data on urban wastewater quality and on the quantity and quality of industrial wastewater. Observation and examination of groundwater is also not performed systematically.

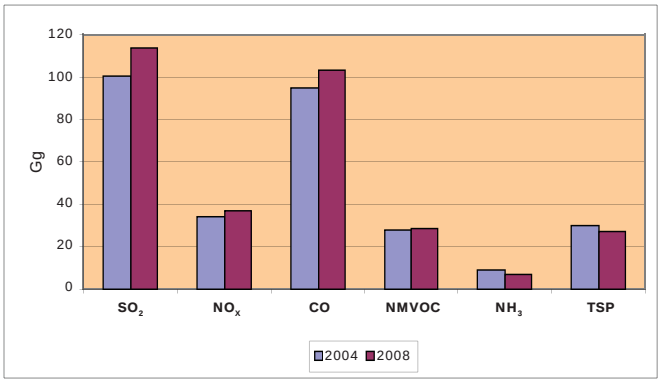
Air pollution

Air quality remains a problem in the major urban areas in the country. Problems due to air pollution affect approximately 60 per cent of the population, i.e., some 1,225,000 people, in particular, those living in Bitola, Skopje, Tetovo and Veles.

The main sources of air pollution in the country are the energy sector (mostly coal-fired thermal power plants); district heating plants; refineries; the chemical industry; traffic; waste dump sites; fuel combustion in households and individual heating boilers; and the construction industry.

The dominant contribution of the energy and industrial sector to air pollution is explained by the use of lignite, which accounts for the production of about 70 per cent of the electricity used in the country. Lignite has a low calorific value and high moisture content, and its combustion produces high quantities of fly ash, sulphur dioxide (SO_2) and nitrogen oxides (NO_x). Moreover, thermal power plants, such as REK Bitola, are equipped only with electrostatic precipitators and do not have desulphurization and denitrification technology installed.

Air emissions, 2004 and 2008



Source: Macedonia Informative Inventory Report, 2010.
Note: CO = carbon monoxide; NMVOC = Non-methane volatile organic compound; NH_3 = ammonia; TSP = total suspended particles.

Emissions from transport include SO_2, carbon monoxide, NO_x, ozone and particulate matter. The main reasons for air pollution from the transport sector are poor quality of engine fuel, out-of-date vehicles and generally poor technical standards for the vehicle fleet.

The health effects of particulate air pollution can be severe and depend on particle size, composition and concentration, and can fluctuate with daily changes in PM10 ("coarse" particulate matter) or PM2.5 ("fine" particulate matter) levels. PM10 concentrations are above the limit value of 0.040 milligrams (mg) per cubic metre (m^3) in all monitored cities, with the exception in one monitoring station in Lazaropole. The highest average yearly concentration was registered in Skopje in 2006 (0.135 mg/m^3) (in 2009, the average yearly concentration in Skopje was 0.090 mg/m^3, in 2007 0.082 mg/m^3 and in 2004 0.075 mg/m^3). It is suggested that this is attributable to the use of solid fuel for heating households in the winter, as well as the impact of industry and traffic.

Drinking water quality

Since 2002, overall drinking water quality in the country has improved. However, water quality is still a problem in smaller rural communities, where water companies are less financially able to maintain standards.

In 2009, 1,038 sanitary-hygiene inspections on sources of public water supply were carried out. In cities, microbiological standards were not met in 1.18 per cent of public water supply systems and, for villages connected to central urban water supply systems, 9.17 per cent did not comply with standards. But the biggest problems were encountered with the drinking water samples from the rural areas with their own water supply systems (6.4 per cent of the total population): 29.6 per cent of drinking water samples from these rural areas did not meet microbiological standards; and especially in villages with private water supply sources, where 42.63 per cent drinking water samples were found to be microbiologically unfit.

The chemical quality of drinking water varies with the origin of drinking water sources. Almost all karstic and surface water, and significant amounts of well water, are notably short in fluoride, which helps prevent tooth decay. Consequently, in accordance with the Strategy for Oral Health, in 2009 fluoridation of milk was introduced. Fluoridated milk is distributed to preschool children in kindergartens.

Wastewater

OHIS wastewater treatment plant

The quality of sanitation remains a problem. Industrial wastewater is one of the most significant polluters of surface water and groundwater. Only a small number of industrial wastewater treatment plants have been built, and most provide only mechanical treatment, with only a limited number using mechanical and chemical (biological) treatment. In addition, some of these are not functioning due to breakdowns, lack of spare parts or high operating costs (e.g., in the OHIS organic chemicals plant).

Only 10 per cent of existing settlements have access to mechanical and biological treatment of wastewater. Most bigger cities have no sewage treatment plants. The average rate of wastewater collection in sewerage collection systems is around 60 per cent for households. Therefore, the introduction of regular treatment of wastewater in the country is a top priority, both at the local and national levels. Feasibility studies are under way for urban wastewater treatment plants in Prilep, Bitola, Strumica and Gevgelija.

Recreational water

The problems of bathing water quality protection in the lakes are closely related to the implementation of one of the highest priorities for the country's environmental protection: construction of adequate wastewater treatment facilities. Wastewater treatment plants are installed and in operation in the areas around the three big lakes (Ohrid, Prespa and Dojran), and in the cities of Makedonski Brod, Sveti Nikole and Kumanovo. Settlements around the three natural lakes are among the rare ones with wastewater treatment plants available in the country.

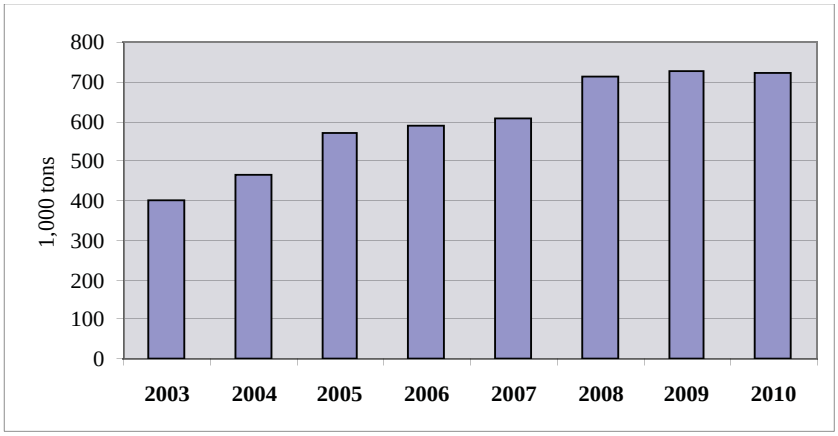
Lake Ohrid

The quality of surface waters used for sports and recreation purposes and for tourism on the shores of the lakes seems to be unsatisfactory, the sole exception being Lake Ohrid. There is evidence of water pollution with microbiological substances (approximately 12 per cent of the samples examined were rated as unfit) and organic substances (15 per cent of samples rated unfit).

The most heavily polluted waterways are reportedly the central and lower sections of the Vardar, Pcinja, Bregalnica and Crna rivers. The most serious water pollution concerns are the discharge of untreated wastewater from mining and industry, as well as wastewater from urban centres and live-stock breeding farms. Reportedly, only 6 per cent of wastewater in the country is treated prior to its discharge into rivers.

Waste

Municipal waste generation, 2003–2010



Source: State Statistical Office, 2011.

Waste management remains a problem in the country. Hazardous waste is not collected and dumped separately, and is processed in regular waste disposal sites. In general, disposal sites do not meet the technical requirements of sanitary landfills. There are also hundreds of illegal dump sites of various sizes in rural areas. Uncontrolled burning at dump sites produces harmful emissions of particulate matter, dioxins and polycyclic aromatic hydrocarbons. Also, degradation of biodegradable waste in dump sites results in the emissions of landfill gas that contains carbon dioxide and methane, which may, if inadequately handled, lead to explosions. Fifty-four municipal disposal sites are non-compliant with existing legislation. Leachate is a problem for all disposal sites and landfills, posing threats to public health, groundwater and surface water resources, land and biodiversity due to the high content of organic matter and heavy metals.

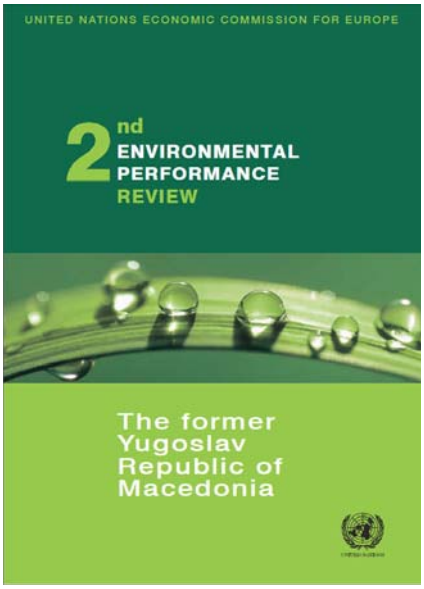
Landfill in Gevgelia

No population exposure studies were available. Because these sites operate like dumpsites, there is no record of the volume or composition of the waste delivered. Some of these sites are situated on riverbanks. In one such case, the landfill in Gevgelia is located on the riverbank of a tributary to the Vardar River, a transboundary river. When waters rise, the municipal waste is washed off into the river, causing transboundary pollution.

The second Environmental Performance Review (EPR) of the former Yugoslav Republic of Macedonia was carried out in 2010–2011.

The main outcome of the EPR is a set of recommendations, which were discussed with a high-level delegation from the country, agreed upon by an intergovernmental expert group, peer reviewed and adopted by the United Nations Economic Commission for Europe (UNECE) Committee on Environmental Policy on 26 May 2011.

This review is part of the UNECE EPR Programme, which assesses a country's efforts to reduce its overall pollution burden, manage its natural resources, integrate environmental and socio-economic policies, adjust and implement its environmental policies and strategies, and strengthen international cooperation.



The most recent reviews include:
Uzbekistan (2010), Georgia (2010), Azerbaijan (2011) and Bosnia and Herzegovina (2011).

EPR reports may be obtained from the United Nations Publications department at:
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