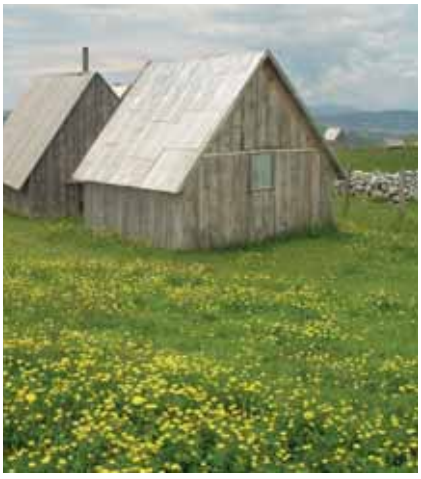
UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Montenegro

Environmental Performance Reviews

Third Review - **Highlights**





UNITED NATIONS

Environmental conditions and pressures

Montenegro is a service-based economy. Its tertiary sector accounted for 73.3 per cent of total gross domestic product (GDP) in 2012. The industrial sector produced 12.4 per cent of total GDP in 2012, while primary production – agriculture, forestry and fishing – accounted for 8.8 per cent and construction 5.5 per cent. GDP per capita in current purchasing power parity (PPP) in 2012 was US$13,551 or 40.9 per cent of the EU-28 average.

Sulphur dioxide (SO_2) emissions increased by 236 per cent – from 11,794 tons in 2007 to 39,728 tons in 2011. Practically all SO_2 emissions were emitted from combustion of fossil fuel in the energy and energy-transformation industry. Most of the energy industry emissions came from the thermal power plant (TPP) Pljevlja.

Emissions of nitrogen oxides (NO_x) converted to NO_2 grew considerably more slowly, by about 26 per cent (from 8,040 tons in 2007 to 10,152 tons in 2011). Ammonia (NH_3) emissions dropped by 14.7 per cent from 3,400 tons in 2007 to 2,900 tons in 2011. Mercury emissions increased by 24.3 per cent between 2007 and 2011, while cadmium emissions were reduced by 4.3 per cent and lead emissions by 51.5 per cent during the same period.

Total greenhouse gas (GHG) emissions decreased by 17 per cent between 2007 and 2011, while CO_2 emissions increased by 8.1 per cent during the same period. The energy sector, comprising energy supply and consumption in the transport, residential and service sectors, has the highest share of GHG emissions, accounting for nearly 68 per cent of total emissions in 2011. This share was followed by those of industry (20 per cent), agriculture (10 per cent) and waste (2 per cent).

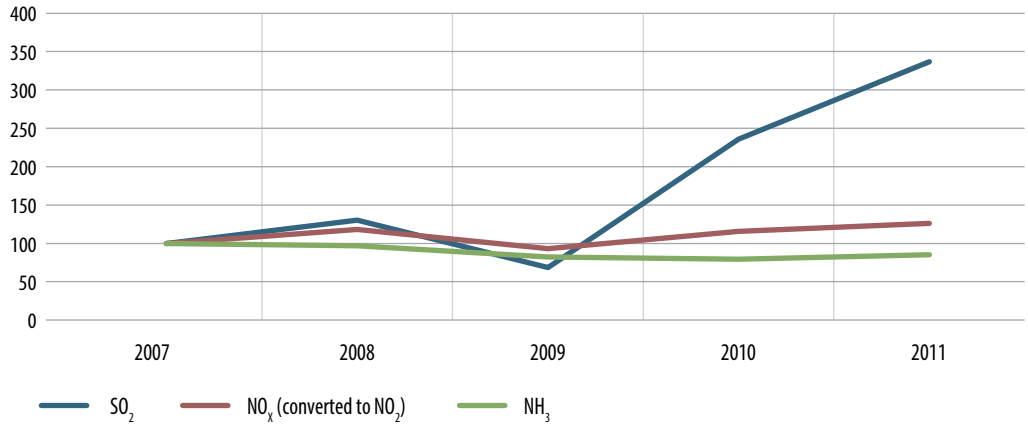
The total water abstraction had a 7.44 per cent increase from 2005 to 2011. Over the same period the amount of water consumed dropped by 7.4 per cent because the water losses increased by 24 per cent – from 48.18 million m^3 in 2005 to 59.77 million m^3 in 2011. Over 80 per cent of the water in 2011 came from ground and spring sources.

The sectoral use of water underwent transformation between 2005 and 2011. Household water use increased by 10.2 per cent while the water used for irrigation decreased by 72.6 per cent. Similar diminishing water use took place in manufacturing (45.6 per cent less) and electricity production (20.3 per cent less).

Forest area had expanded from 7,180 km^2 in 2007 to 9,640 km^2 in 2013 (i.e. by 34.3 per cent). In 2013, forests covered 69.8 per cent of Montenegro's land area. At the same time, the impact of forest fires on forested area diminished.

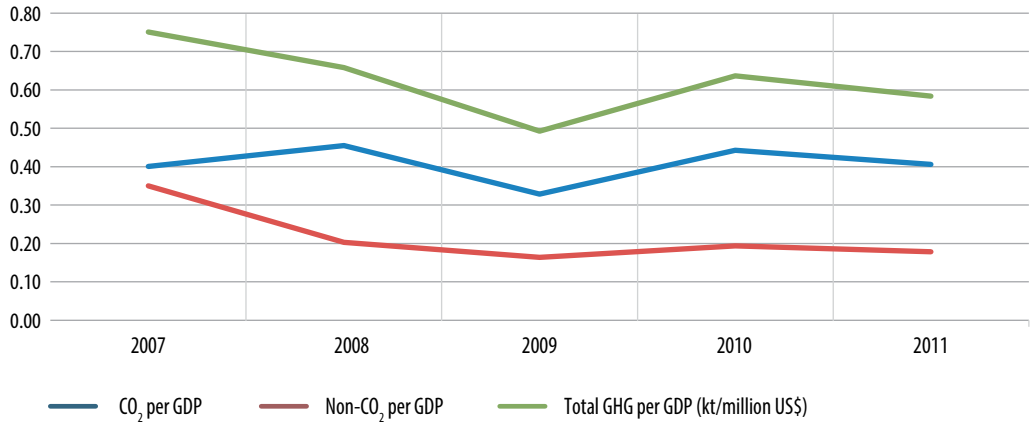
By the end of 2013, the total protected area had expanded to 1,249.72 km^2, covering 9.05 per cent of the country's territory. The increase was largely due to the establishment of the National Park Prokletije (16.038 ha) in 2009. Most (81.34 per cent) of the total protected area is covered by the five national parks.

Figure 1: Air emisions, 2007=100



Source: Environmental Protection Agency, 2014

Figure 2: Tons of CO_2 emission per 1,000 US$ PPP 2005, 2007-2011

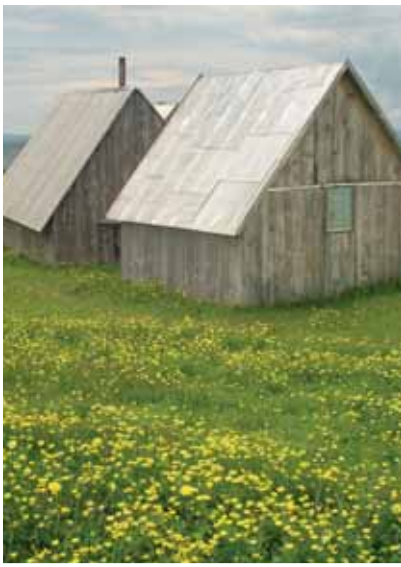


Source: Environmental Protection Agency, 2014

Table 1: Sectoral waste generation, 2011-2012, tons

	2011			2012		
	Non-hazardous	Hazardous	Total	Non-hazardous	Hazardous	Total
Mining and quarrying	1 227.4	563.0	1 790.5	699.7	223.9	923.6
Manufacturing	54 446.6	5 825.2	60 271.8	101 790.3	3 505.9	105 296.2
Electricity, gas and steam supply	495 385.2	188.4	495 573.5	351 301.5	89.4	351 391.0
Total	**551 059.2**	**6 576.6**	**557 635.8**	**453 791.5**	**3 819.2**	**457 610.7**

Source: Montenegro Statistical Office Monstat. Release no. 186, 2011 and release no. 206, 2013



Legal and policymaking framework

Since 2007, Montenegro has significantly changed its legal and policy framework for the environment and sustainable development. A new package of laws and corresponding secondary legislation has been adopted, and a strategic framework for environment and sustainable development has been further developed. However, the implementation of legislation lags behind the intensive efforts to improve the legal and policy framework.

The main driver behind the strengthening of environmental policy and legislation has been the process of accession to the EU. The National Programme for Integration for the period 2008–2012 and the Programme of Montenegro's accession to the European Union 2014–2018 (PPCG) played crucial role in the prioritization of legislative and policy measures, as well as for allocation of financial and other resources for their implementation.

The 2007 National Strategy for Sustainable Development (NSSD), accompanied by the Action Plan, provides an overall strategic framework for activities on environment and sustainable development. As of February 2014, the Government had adopted five reports on NSSD implementation.

Although strategic documents were adopted to define the strategic vision in many specific sectors of environmental protection, yet some areas, e.g. water and climate change, are still not covered by overarching strategic documents. Implementation of some strategic documents, e.g. the Biodiversity Strategy, encounters difficulties because of poor financing. The development of strategies, plans and programmes at the local level faces significant delays.

Since 2007, substantial institutional changes have taken place in the set-up of environmental authorities. Establishment of the Environmental Protection Agency (EPA) in 2008 allowed the separation of law and policymaking from implementation, with the former functions now vested in the Ministry of Sustainable Development and Tourism and the latter being the responsibility of the EPA. Another substantial change was the creation in 2012 of the Administration for Inspection Affairs as a separate institution, bringing together all inspections, including environmental, forestry, water, housing and sanitary-epidemiological ones. The Hydrometeorological Institute and the Seismological Bureau were merged into one institution in 2012. A notable development was the creation of an institutional system for ionizing radiation.

Montenegro has a number of instruments and initiatives directed at various aspects of green economy. However, the country does not have a strategic document that would explicitly state its commitment to green economy.

Since 2007, the competences of local self-government authorities on environmental matters have increased. They were assigned new responsibilities and were also provided with a range of opportunities to improve environmental policy at the local level. However, local self-government authorities dealing with environmental issues are poorly staffed and trained, and face difficulties in coping with their environment-related responsibilities.

BOX 1. NATIONAL COUNCIL FOR SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE

The National Council for Sustainable Development was established by the Government in 2002 as a cross-sectoral advisory body on issues of sustainable development. In 2006, the Council's composition was expanded to include a wider range of stakeholders. The first reform of the Council took place in 2007–2008, when its composition was reduced from 45 to 23 members and working groups were introduced. The second reform took place in 2012–2013. It resulted in strengthening the climate change dimension in the work of the Council, which was renamed the National Council for Sustainable Development and Climate Change. The reform also institutionalized the working groups of the Council as permanent bodies.

Following the second reform, the composition of the Council includes: the Minister of Sustainable Development and Tourism, Minister of Economy, Minister of Labour and Social Welfare, Minister of Agriculture and Rural Development, Minister of Transport and Maritime Affairs, one representative of the Ministry of Sustainable Development and Tourism, one representative of the Ministry of Finance, the Director of the HSS, three representatives of local self-government units, one representative of academia, three representatives of employers' associations, one representative of trade unions, two representatives of NGOs (one for sustainable development and one for climate change) and two independent experts (one for sustainable development and one for climate change). The President of Montenegro presides over the Council.

The mandate of the Council goes beyond monitoring of implementation of the National Strategy for Sustainable Development. The Council advises on various legal, strategic and planning documents related to sustainable development. On 2 December 2013, the Council held its 25th meeting.

Recommended measures:

- **Prioritize implementation of environment-related legislation;**
- **Achieve stronger coherence between strategic documents;**
- **Strengthen capacity for conducting SEA at local level;**
- **Integrate the green economy concept into strategic documents;**
- **Assist local self-government authorities to implement environment-related responsibilities.**

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.

Compliance and enforcement

The establishment in 2012 of the Administration for Inspection Affairs separated enforcement from implementation. However the focus of compliance monitoring is on the number rather than quality of inspections. There is no formal methodology behind the current inspection planning approach. No standardized operating procedures for inspections have been adopted to date. The establishment of an efficient enforcement system in the water sector remains a challenge, because of the limited resources of the water inspection, as well as difficulties with data coordination and exchange between the environmental and water authorities.

Laws on EIA and IPPC became applicable in 2008 and relevant secondary legislation has been developed and enhanced. In practice the EIA instrument is overused, especially at the local level. The capacity and ability of local administration bodies to perform IPPC procedures raise doubts. Water permits are not integrated with IPPC permits.

The assistance to the regulated community to act in compliance with environmental matters is very limited. Smaller businesses, in particular, lack expertise and information about means of compliance. Initiatives to promote resource efficiency and cleaner production are in their inception phase. The adoption of environmental management systems has progressed lately, though the number of certified enterprises is stagnating.

Putting the environmental information system in operation and ensuring the functioning of the integrated register of environmental polluters are urgent priorities. Currently, the lack of these tools hinders compliance and enforcement, making it difficult to identify and profile the regulated community, plan and organize inspections and keep the public informed.

Recommended measures:

- **Operationalize the integrated register of environmental polluters;**
- **Centralize responsibilities on IPPC matters;**
- **Further increase the transparency and cost recovery of EIA and permitting;**
- **Develop a clear and transparent approach for inspection planning and reporting;**
- **Provide joint capacity-building for inspectors and judges.**

Economic instruments for greening the economy

There has been increasing use of economic instruments for promoting environment protection. Pollution taxes that were already legally prescribed long before 2007 were finally implemented in 2008. This was associated with a doubling of tax rates for most pollution taxes compared with the rates that should have applied before. There has also been a reform of the methodology for calculating charges for water pollutants. At the same time, there is no evidence that pollution charges create significant, if any, incentives for polluters to change their behaviour towards the environment.

The 2008 Law on Environment does not mention any earmarking of the revenues from pollution charges. However, the situation differs for water pollution charges as revenues from these charges are earmarked for the financing of water management. An environmental fund, as an additional source of financing, has not yet been established.

There is no direct flow of information concerning the revenues from pollution charges from the State Treasury neither to the EPA, nor to the Water Directorate of the Ministry of Agriculture and Regional Development. Such information is available only upon special request to the Ministry of Finance. This makes it difficult to gauge the incentive effects of pollution charges at the level of individual polluters. Information about revenues and bill collection rates is not in the public domain.

Budget funds allocated to environmental protection at central government level have remained relatively modest. Environmental protection accounted for some 0.3 per cent of the total state budget, corresponding to 0.16 per cent of GDP, in 2013.

The 2011 Law on Public Procurement provides for the possibility to include environmentally related subcriteria and energy efficiency requirements in public tenders. However, there is as yet little experience concerning green procurement, pointing to the need for more training in the area.

Major progress with tariff reform has been achieved in the electricity sector, where cross-subsidies in favour of households have been largely eliminated since 2011. However, there are concerns that current tariffs allow only for covering operating costs but not full costs, which also requires a sufficiently high margin of return on real capital and adequate provision for depreciation. This continues to restrain urgently needed investments in the electricity sector infrastructure.

The management of the five national parks is funded from their own revenues, grants and transfers from the state budget. However total revenues are barely sufficient to finance operating costs and basic maintenance works. There is significant public underinvestment in the national parks.

Recommended measures:

- **Review the system of pollution charges and ensure their effective collection;**
- **Create stronger incentives for enterprises to take pollution abatement measures;**
- **Regionalize community utility services;**
- **Ensure the financial viability of utility companies.**

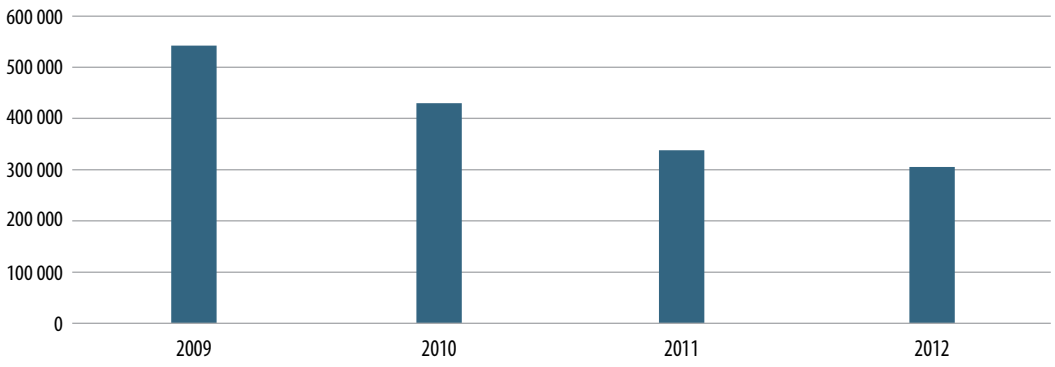
Environmental monitoring, information and education

Table 2: Monitoring budget of the Environmental Protection Agency, 2009–2012, €

	2009	2010	2011	2012
Air quality	175 000	170 000	65 000	160 000
Soil	85 000	45 000	39 800	29 000
Radioactivity	102 000	60 000	75 000	40 000
Marine eco-system	160 000	115 000	70 000	40 000
Environmental noise	20 000	..	13 000	6 000
Biodiversity	..	40 000	75 000	30 000
Total	**542 000**	**430 000**	**337 800**	**305 000**

Source: Environmental Protection Agency, 2014

Figure 3: Total monitoring budget of the Environmental Protection Agency, 2009–2012, €



Source: Environmental Protection Agency, 2014

Montenegro has made notable strides in the last few years on environmental monitoring. The EPA has taken control over most of the monitoring activities and made efforts to strengthen the various monitoring networks and to organize them in accordance with the latest international practice. At the same time, the legal framework requires amendments to improve the functioning of the networks.

Monitoring budget has been decreasing from year to year since 2009. There is a lack of adequate equipment for some monitoring activities.

Efforts were made to establish an integrated environmental information system, of which the air quality and water information systems are an integral part. However it has been developed partially, and for the parts available no automatic information flows have been ensured. Data reporting by enterprises is still limited.

Montenegro adopted a list of 55 national environmental indicators. However the available data allow calculating only 36 of the adopted indicators.

The first indicator-based state of environment (SoE) report was produced in 2013 and adopted by the Government in 2014. The SoE is based on the 36 indicators from the adopted list of 55 national indicators. However the assessed situation is currently not linked to policy development and its application.

The environmental information and data that are available are made accessible to the public, either through the websites of the Government or upon request. Data acquired through monitoring activities are included in relevant reports but are not accessible directly at webpages, except data on air quality.

Educational reform following internationally accepted practices is implemented in order to move from content-oriented curricula to goal-oriented planning of curricula. Major challenge is the shortage of qualified teacher trainers to provide training on the new curricula and to apply a more multidisciplinary approach to teaching, which is a must for teaching the complex concepts of sustainable development.

Recommended measures:

- **Ensure necessary funding for monitoring activities;**
- **Clarify responsibilities for monitoring of soil and water;**
- **Accelerate the development of an integrated environmental information system;**
- **Enforce reporting by enterprises;**
- **Improve online accessibility of environmental information and data.**

Implementation of international environmental agreements

Since 2007, Montenegro has acceded to a number of global and regional multilateral environmental agreements (MEAs). It completed accession to all ECE environmental conventions. The country is not yet a party to two protocols: the Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the Protocol on Pollutant Release and Transfer Registers to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

The implementation of MEAs strongly depends on international financial support. While Montenegro has enjoyed funding from the GEF, the EU through the IPA, and many other international donors, the situation of high dependence on international aid cannot be sustainable in the future.

Progress was achieved on some indicators with regard to the national commitments on the MDGs. For example, the country managed to increase the proportion of territory protected to preserve biodiversity, as well as to increase the proportion of renewable energy out of total energy consumption. At the same time, Montenegro is about to fail to reach some of its MDG commitments. There is no progress on increasing the proportion of protected marine ecosystems, on the anthropogenic impact on the quality of surface water, or on reducing losses in the water supply network.

Recommended measures:

- **Reduce the country's dependence on international aid in fulfilling international obligations;**
- **Ensure adequate funding to reach Montenegro's commitments on MDG7;**
- **Accede to the Protocol on Pollutant Release and Transfer Registers;**
- **Accede to the Protocol on Water and Health;**
- **Ensure implementation of MARPOL Annex VI.**

Climate change mitigation and adaptation

Table 3: Forests areas damaged by fires, 2004-2011, ha

	2004	2005	2006	2007	2008	2009	2010	2011
Areas	1 376	103	210	18 311	3 628	88	616	5 091

Source: Statistical Yearbook of Montenegro 2012 and 2009

Montenegro participates in UNFCCC and Kyoto Protocol. It submitted the Initial National Communication in 2010. The second National Communication is under preparation. Two CDM projects have been registered: the HPP at Otilovici in Pljevlja and the windmill park Mozura near Bar; however, both projects are delayed because of problems with financing.

Montenegro has not yet defined any national targets for GHG mitigation or limitation. The energy sector, comprising energy supply and consumption in the transport, residential and service sectors, has the highest share in GHG emissions, accounting for 68 per cent of the total emissions in 2011. This was followed by the industry (20 per cent), agriculture (10 per cent) and waste (2 per cent) sectors. About 99 per cent of emissions from the industrial sector originated from Aluminum Plant Podgorica (KAP).

The work to develop national strategy on climate change, tackling both mitigation and adaptation, is in progress. Some progress has been made to integrate climate change adaptation into sectoral policies, mainly in the forestry sector. A climate change adaptation strategy for the health sector is under development. Other sectors are less advanced, especially agriculture and coastal zone management.

Although Montenegro has high potential for renewable energy, only hydropower is used for electricity production in considerable quantity, as is biomass for heating purposes. The country faces challenges to increase renewable energy sources. These include improving conditions for investors in renewable electricity production and implementing needed grid improvements.

Montenegro has undertaken steps to increase energy efficiency in the construction sector, mainly for new buildings. At the local level, these steps led to some changes, such as increased efficiency of public buildings and lighting. The process of legalization of illegal settlements can be used as a trigger for improving efficiency standards of existing buildings.

The Government is making efforts to raise public awareness on climate change-related issues. Official websites describe efforts on climate change and energy efficiency. At the local level, awareness is growing and has led to some changes, such as increased efficiency of public buildings and lighting.

Recommended measures:

- **Adopt a national strategy on climate change and secure funding for its implementation;**
- **Integrate climate change adaptation into sectoral policies;**
- **Reduce losses in electricity transmission and the distribution grid;**
- **Further improve conditions to invest in renewable electricity production;**
- **Develop alternatives to lignite-fired power plants.**

Water management

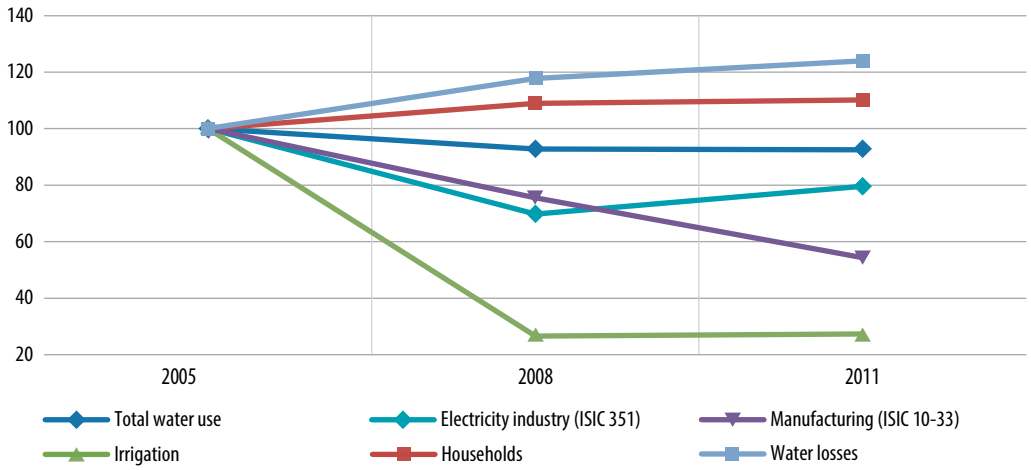
Although policy and legislative improvement has occurred in recent years, a number of challenges remain in the area of water management. Among them is groundwater protection, since most water for human consumption relies upon groundwater from karstic aquifers. Another challenge is coastal zone management, where the introduction of integrated management is required.

Only 44 per cent of the urban population is connected to a sanitary network according to 2012 data, a value that represents 28 per cent of the total population. WWTPs are in operation in Bar, Budva, Mojkovac and Podgorica. Several WWTPs are being built in the coastal area and in the central and northern regions. In addition, some WWTPs are expected to be under construction soon and others are in the public tender process. Nevertheless, wastewater drainage networks are required to be in place.

The 2007 Law on Water defines two river basin districts – the Adriatic and the Black Sea river basin districts. According to the Law, river basin management plans for these districts and a new water master plan for the whole country are to be prepared by 2016. A water information system, which would include data about water use and planning, is not yet developed. However, in the process of negotiations with EU it was agreed to prolong deadline for this activity and ensure financial resources through IPA 2014-2020 Programme.

In 2012, about 45 per cent of rivers had good water quality, 30 per cent were very good and 25 per cent were bad. Most polluted rivers include the Veţišnica, Ćehotina in Pljevlja, Morača in the area of Podgorica, Ibar near Bać and Lim near Bijelo Polje. Groundwater is of good quality, in general, although urban and industrial development represents a significant threat. Aquifers are at risk near the major settlements.

Figure 4: Water abstraction, 2005, 2008 and 2011, 2005=100



Source: Environmental Protection Agency and Statistical Office of Montenegro, 2013

Floods potentially threaten 250 km² of farmland and urban zones. The need for flood protection measures is particularly evident in the large flat karst plain areas. Most of the constructed drainage systems are not in operation, in general due to insufficient maintenance. Flood protection and mitigation measures have involved the linearization of rivers and the construction of artificial channels.

Recommended measures:

- **Develop a water master plan;**
- **Develop river basin management plans;**
- **Develop a national information system for water planning and use;**
- **Implement sustainable solutions for municipal and industrial wastewater treatment and sludge valorization.**

Waste management

Montenegro established a solid legal framework for a national waste management system by adopting the new Law on Waste Management in 2011. It is currently preparing a new national waste management strategy, along with a new national waste management plan. Key challenges for implementation include low level of coordination, limited cooperation among key stakeholders (including municipalities) in waste management and, in some cases, non-enforcement of legislation.

The new landfills in Podgorica and Bar are a significant improvement for the waste management in central and coastal regions but the mountain region is lacking one. Development of a new sanitary landfill in the mountain region is a priority to allow decommissioning of old disposal sites.

Organizing waste services on a regional level is key to achieving sustainable and effective waste management in the country. Although there have been many discussions with municipalities to strengthen cooperation in waste management, only three inter-municipal companies for management of regional sanitary landfills have been established.

Data on industrial and municipal solid waste do not seem to realistically reflect waste generation. The data is based on estimations and data verification is lacking. Practically all strategic documents call for improvement of waste inventories.

Fee collection rate in waste management remains very low (56.5 per cent for households and 68 per cent for companies). This has an impact on the financial performance of municipal companies collecting waste.

MUNICIPAL WASTE COLLECTION

Municipal waste collection is well developed in the coastal region, where tourism is concentrated. Municipalities in this region had to develop specific collection schemes for historical towns, which are practically inaccessible for standard collection vehicles. For example, Kotor is using small trailers pulled by street-sweeping vehicles. Furthermore, to ensure reliable collection in the tourism season, collection companies are increasing staff numbers and the frequency of collection in summer.

Overall, Montenegro has sufficient capacity in containers and collection vehicles for the whole territory – but the coastal region has more containers and vehicles, in order to cope with tourism in summer. Mountain region municipalities are forced to increase collection frequency due to the insufficient number of containers and vehicles. Regionalization would allow the sharing of equipment in an appropriate manner to balance requirements across municipalities.

Montenegro started activities aimed at recovery of secondary raw materials from waste. However these are hindered by the lack of market oriented mechanisms to stimulate recycling of waste. Instruments supporting the sale of recyclables (e.g. compensating part of the costs of exporting recyclables) are not in place.

The situation in medical waste management has improved since 2011. The Ministry of Health signed a concession contract to build seven facilities for the treatment of medical waste within the following 15 years. The first medical waste treatment plant was put into operation in Berane in 2013.

No national PCB monitoring programme is currently in place. The total amount of PCBs in Montenegro is not known, but a survey conducted in 2007 indicated about 2,000 tons of PCBs in transformers and capacitors. A detailed, countrywide inventory of equipment containing PCBs is lacking.

A temporary facility for storage of radioactive waste was built in 2006-2008. A permit for its operation was issued in 2012. This allows safe storage of this waste according to international standards.

Recommended measures:

- **Develop a new sanitary landfill in the mountain region;**
- **Elaborate schemes to stimulate market-based mechanisms for recycling and reuse;**
- **Support inter-municipal cooperation on waste management;**
- **Improve collection and verification of waste data;**
- **Perform a country-wide inventory of equipment containing PCBs.**

Montenegro
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 Montenegro was carried out in 2014, and recommendations to the country on how it can improve its environmental governance were adopted by the ECE Committee on Environmental Policy in October 2014. The third review examines the progress made by Montenegro in the management of its environment since the second review in 2007. It covers policymaking, implementation and the financing of environmental policies and projects, and examines in-depth areas such as waste management and the protection of water resources, as well as impacts of and measures to address climate change. The review makes concrete suggestions on how to enhance efforts to achieve a comprehensive and systemic response to sustainable development challenges.

The Highlights of the third Environmental Performance Review of Montenegro 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 Montenegro.

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