



Sectoral Integration of Biodiversity in Serbia

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1. Introduction

Serbia reported¹ that biological resources represent an important economic potential. Their exploitation significantly contributes to the socio-economic development. Biological resources are renewable, but only to a certain extent. If their exploitation in agriculture, forestry, or industry is excessive, the survival of certain species and/or ecosystems could be put into danger. The principles of sustainable use of biological resources must be implemented first of all within sectors that significantly contribute to socio-economic development, such as agriculture, forestry, hunting, fishing, energetic, industry, etc.

2. Environmental protection and EU integration

- Resolution of the National Assembly for the Accession to the EU
- National Strategy of Serbia for the Accession to the EU
- Action Plan for harmonisation of the legislation of the Republic of Serbia with EU legislation
- Resolution of the Council of 6 November 2007 on principles, priorities, and conditions of EU partnership with the Republic of Serbia, including Kosovo, according to the UN Security Council Resolution 1244 of 10 June 1999, and repealing Decision 2006/56/EC
- Commission of the European Communities, Serbia 2006 Progress Report, SEC(2006) 1389, of 8 November 2006
- Convention on access to information, public participation in decision-making and access to justice in environmental matters (Aarhus Convention) ("Official Gazette of the Republic of Serbia – International Conventions" No. 38/09 of 25 May 2009)

3. Legal and institutional framework for environmental management

The system of legal norms in environmental protection and improvement in the Republic of Serbia consists of a number of laws and other regulations. Legal and executive authorities are appointed to competent republic organs. Certain authorities are legally devolved to the autonomous province or local governments.

4. Funding systems in Environment Protection

System of financing environmental protection in the Republic of Serbia is decentralised and counts on dedicated funds, own resources, and budget resources.

Other sources of financing include municipal budgets, industrial financial resources, public enterprises financial resources, and foreign financial aid. General characteristics of the system of financing environmental protection are the insufficiency of dedicated funds and decentralisation of financing sources, particularly from the private sector, as well as the lack of application of financial instruments such as long-term loans, securities, partnership between public and private sector, or investment in

¹ Serbia (2010). Fourth National Report to the United Nations Convention on Biological Diversity, Ministry of Environment and Spatial Planning, 105 pp.

stocks.

Proportional investment of dedicated funds for environmental protection related to the realised gross domestic product in 2001 and 2008 was 0.3%. Other countries in transition assign around 2% of GDP for environmental protection.

Funds for environmental protection at the republic level come from taxes for commercial collecting and trading of wild flora and fauna, taxes for environmental pollution equalling 60%, taxes for environmental pollution in areas of particular national interest equalling 80%, taxes for water protection, and funds approved by the Law on Budget of the Republic of Serbia.

The Fund for Environmental Protection was established in 2005, in keeping with the Law on Environmental Protection, for the purpose of securing financial resources for stimulation of environmental protection and improvement in the Republic of Serbia.

The budget funds of the autonomous province and local governments are imposed.

The most active donors and international financial institutions that provide financing of environmental protection include: the EU, the World Bank, the European Bank for Reconstruction and Development, and bilateral donors.

5. Integrating biodiversity conservation into relevant sectors

National legislation

The new legal framework on environmental protection was introduced into the Republic of Serbia by a set of laws from 2004 (Law on Environmental Protection, Law on Strategic Environmental Impact Assessment, Law on Environmental Impact Assessment, and Law on Integrated Prevention and Control of Pollution), and it was significantly improved in 2009 by adopting the second set of laws (16) related to environmental protection ("Official Gazette of the Republic of Serbia" No. 36/09, Appendix 1), which represent a major progression in coordination of regulations related to environmental protection with EU directives.

A significant number of laws that regulate specific sectors, including issues on environmental and biodiversity protection, were implemented in Serbia. The most important are:

- Law on Mining ("Official Gazette of the Republic of Serbia" No. 44/1995, 34/2006 and 104/2009)
- Law on Geological Research ("Official Gazette of the Republic of Serbia" No. 44/1995 and 101/2005)
- Law on Spatial Planning of the Republic of Serbia ("Official Gazette of the Republic of Serbia" No. 13/1996)
- Law on Plant Protection ("Official Gazette of the Republic of Serbia" No. 24/1998, 26/1998, 101/2005, and 41/2009)
- Law on Water Regime ("Official Gazette of SRY" No. 59/1998, "Official Gazette of the Republic of Serbia" No. 101/2005)
- Law on Energetics ("Official Gazette of the Republic of Serbia" No. 84/2004)

- Law on Agricultural Land ("Official Gazette of the Republic of Serbia" No. 62/2006, 65/2008, and 41/2009)
- Law on Organic Production ("Official Gazette of the Republic of Serbia" No. 30/2010)
- Law on Forest Reproductive Material ("Official Gazette of the Republic of Serbia" No. 135/2004, 08/2005, and 41/2009)
- Regional Development Strategy of the Republic of Serbia for 2007-2012 ("Official Gazette of the Republic of Serbia" No. 21/2007)
- Law on Air Protection ("Official Gazette of the Republic of Serbia" No. 36/2009)
- Law on Tourism ("Official Gazette of the Republic of Serbia" No. 36/2009)
- Law on Protection from Environmental Noise ("Official Gazette of the Republic of Serbia" No. 36/2009)
- Law on Waste Management ("Official Gazette of the Republic of Serbia" No. 36/2009)
- Law on Chemicals ("Official Gazette of the Republic of Serbia" No. 36/2009)
- Law on Agriculture and Rural Development ("Official Gazette of the Republic of Serbia" No. 41/2009)
- Law on Animal Husbandry ("Official Gazette of the Republic of Serbia" No. 41/2009)
- Law on Plant Health ("Official Gazette of the Republic of Serbia" No. 41/2009)
- Law on Plant Protection Products ("Official Gazette of the Republic of Serbia" No. 41/2009)
- Law on Genetically Modified Organisms ("Official Gazette of SRY" No. 41/2009)
- Law on Planning and Construction ("Official Gazette of the Republic of Serbia" No. 72/2009)
- Law on Environmental Protection Fund ("Official Gazette of the Republic of Serbia" No. 72/2009)
- Law on Waters ("Official Gazette of the Republic of Serbia" No. 30/2010)
- Law on Forests ("Official Gazette of the Republic of Serbia" No. 30/2010)
- Law on Game Animals and Hunting ("Official Gazette of the Republic of Serbia" No. 18/2010)

6. Environmental protection in national strategic documents

Implementing the strategies is a cross-government responsibility, with leadership from all departments to their stakeholders. To halt biodiversity loss, the strategies seek to make biodiversity a part of the mainstream policies and to incorporate the relevant targets at the country level. The basis for most of this is a statutory requirement for public bodies to take account of biodiversity conservation when realising their functions. The strategies emphasise that healthy, thriving and diverse ecosystems are essential to everybody's quality of life and well-being.

The strategic framework for biodiversity protection is defined through strategic documents and purposes of the Serbian Government for the accession to the EU, through the National Environmental Protection Programme, and through strategic sectors (agriculture, forestry, etc.). The most important strategic documents include:

- National Strategy for Economic Development of the Republic of Serbia for 2006-2012
- Regional Development Strategy of the Republic of Serbia for 2007-2012
- Energy Sector Development Strategy of the Republic of Serbia by 2015
- Agricultural Development Strategy of the Republic of Serbia
- Integrated Border Management Strategy
- Foreign Investment Stimulation and Development Strategy
- Forestry Development Strategy
- Waste Management National Strategy with the EU Approximation Programme

- Poverty Reduction Strategy
- Spatial Plan of the Republic of Serbia
- Water Management Basics of the Republic of Serbia
- Strategy for Development of Railway, Road, Water, Air, and Intermodal Transport in the Republic of Serbia for 2008-2015

***National Strategy for the Accession of Serbia and Montenegro to the EU** from 2005 sets the main goal to increase the gross domestic product rate through investments based on principles of sustainable development.

***National Strategy for Sustainable Development of Serbia** was adopted in 2008. In Chapter 5, Environment and Natural Resources, the following are listed as sector goals in biodiversity protection: issuing the law on nature protection and ratification of international conventions, development of the National Strategy for Biodiversity Conservation and Action Plan, enlargement of natural protected areas up to 10% of the country's territory, establishment of biomonitoring, information system, inventory, biodiversity monitoring, GMO control, Gene Bank. According to goals determined in the Strategy, the Action Plan defines the following: specific measures and/or activities for Strategy implementation; competent institutions and partners in implementation of measures and/or activities; deadlines for implementation of measures and/or activities; total cost of implementation of measures and/or activities, and financing sources.

Goals of protection and improvement of biodiversity in this strategy include:

- issuing the law on nature protection and ratification of international conventions;
- development of the national strategy for sustainable use of natural resources and assets;
- development of the national strategy and action plan for biodiversity conservation;
- enlargement of natural protected areas up to 10% of the territory of Serbia, namely, enlargement of protected areas network, establishment of ecological corridors, and of ecologically important areas network;
- establishment of efficient biomonitoring system;
- establishment of information system on biota and other natural assets of the Republic of Serbia;
- inventory of biological diversity in the Republic of Serbia;
- establishment of monitoring of biodiversity components;
- implementation of efficient GMO control mechanisms in keeping with the EU practice;
- improvement of methods for sustainable use of the gene pool and establishment of a genetic material bank, with increased support to genetic resources conservation, and increase of the number of subjects and areas included in conservation activities.

***Development of the National Environmental Protection Programme** was initiated in scope of the Environmental Capacity Building Programme in Serbia, financed by the European Commission. The programme was adopted by the Government in January 2010. The programme will be implemented through the Action Plan, which will be developed by the Ministry of Environment and Spatial Planning in cooperation with other relevant institutions. The Action Plan relates to the period of 5 years. The National Environmental Protection Programme relates to the period of at least 10 years. It provides the basic strategic framework for solving ecological and environmental issues, and it is realised through the

Action Plan. It is prepared with the aim to develop the modern environmental protection policy in the Republic of Serbia.

The following principles are, among others, applied in development and implementation of the Programme:

- The principle of sustainable development
- The principle of natural asset conservation
- The principle of compensation
- The principle of raising awareness on environmental protection
- The principle of public information and involvement
- The principle of harmonisation of national legislative with EU legislation (Acquis Communautaire) in scope of environmental protection

Timeline for implementation of environmental protection policy goals:

- Short-term goals for 2010-2014 (development of the efficient environmental protection policy framework (in keeping with the EU acquis on environmental protection) – improvement of the legal framework, development of sector strategies, improvement of monitoring system, etc.
- Continual goals for 2010-2019, include, among others, goals related to nature and biodiversity conservation.
- Medium-term goals for 2015-2019 include investment projects of lower priority and implementation of EU acquis of lower priority.

Sectors in protection of environment and biodiversity

Besides the Ministry of Environment and Spatial Planning, other competent ministries related to the environment include:

- Ministry of Agriculture, Forestry, and Water Management – Directorate for Forests, Directorate for Plant Protection (control of production, traffic, import, export, storage, and application of plant protection and nutrition agents), Veterinary Directorate;
- Ministry of Economy and Regional Development (industry, integral planning of tourism development and complementary activities);
- Ministry of Health (implementation of sanitary regulations related to environmental protection);
- Ministry of Infrastructure (road, air, railway, and water traffic)
- Ministry of Mining and Energy (energy efficiency, licenses for exploitation of mineral resources except ground waters, renewable energy sources);
- Ministry of Trade and Services

7. Agriculture

Besides laws within the competence of the Ministry of Environment and Spatial Planning, laws and regulations issued by the Ministry of Agriculture, Forestry, and Water Management also regulate activities in scope of biodiversity protection, particularly of use of forest, hunting, fishing and genetic resources for food and agriculture (Law on Food Safety, Law on Agriculture and Rural Development, Law

on Animal Husbandry, Law on Protection of Rights of Plant Sort Cultivators, Law on Genetically Modified Organisms – all issued in 2009, as well as Law on Forests (2010) and Law on Hunting (2010).

The Law on Animal Husbandry from 2009 also regulates conservation of genetic resources of livestock and biological diversity in animal husbandry. The following aims in animal husbandry are determined, among other things: conservation of genetic variability and biological diversity in animal husbandry; conservation of agricultural areas used according to their purpose; implementation of organic production in animal husbandry; conservation of autochthonous races of domestic animals and cattle breeding with respect to ecological norms. The Law foresees the administration of the List of Genetic Reserves of Domestic Animals, as well as the way of their preservation, with the corresponding Registry of Autochthonous Races. Furthermore, the Law foresees the development of the Programme of Biological Diversity Conservation in Animal Husbandry for the period of five years, which will include the assessment of the state of biological diversity in animal husbandry. The Law pays particular attention to the autochthonous race of the honeybee *Apis mellifera carnica* and forbids breeding and traffic with reproductive material of other honeybee races on the territory of the Republic of Serbia.

The Law on GMO of the Republic of Serbia came into force in June 2009. However, during the summer it was withdrawn for further amendments. It was preceded by the Federal Law on GMO ("Official Gazette of SRY" No. 21/2001 from 11. May 2001, and "Official Gazette of RS" No. 101/2005) that was mainly based upon EU 90/220/EEC directive, with following rulebooks: Rulebook on Limited Use of GMO, Rulebook on Trade of GMO and GMO Products, Rulebook on Production of GMO and GMO Products (these rulebooks are based on EU 2001/18/EC directive), Rulebook on Identity Card of Federal Inspector for GMO, Rulebook on Contents and Data of GMO and GMO Product Registry.

The Ministry of Agriculture, Forestry, and Water Management is responsible for the following:

- All questions related to GMO,
- Implementation of the Cartagena Protocol on Biosafety,
- Biosafety Clearing House,
- Organisation of the National Committee for Biosafety,
- Registration and protection of plant sorts,
- Conservation of genetic resources and agrobiodiversity,
- Accreditation of laboratories,
- Phytosanitary inspectorate,
- Food and livestock food production quality control

The following strategic documents regulate the scope of agriculture:

- Agriculture Development Strategy (2005)
- Draft Programme of Rural Development in the Republic of Serbia (developed in 2008, waits adoption)
- Development and Improvement of Animal Husbandry in the Republic of Serbia for 2008-2012

* **Strategy for Agricultural Development in Serbia**, adopted in 2005, foresees instruments for assuring adequate protection and control measures when working with GMO, and obligates relevant institutions to harmonise the legislative in scope of GMO with the EU legislative. In this Strategy, the significance of

biodiversity conservation is emphasized several times, particularly in relation to conservation and management of forests, as well as to the necessity to preserve agrobiodiversity and plant and animal genetic resources. The Action Plan of the Strategy foresees the development of the National Programme for Conservation and Sustainable Use of Genetic Resources in Agriculture; adjustment of the existing national database on plant and animal genetic resources to international standards (FAO and IPGRI); support to production based on autochthonous races of domestic animals and plant sorts; study of agrobiodiversity and putting into function the national plant gene bank.

***Rural Development Draft Programme** proposes measures for rural development for 2008-2013, and includes measures related to agrobiodiversity conservation. The second axis of the programme contains measures for environmental improvement, and one of its sub-measures is the "support of traditional races of domestic animals".

Aims of implementation of this sub-measure are: maintenance of animal genetic resources and cultural heritage through the increase of the number of breeding animals of local traditional races that are well-adapted to unfavourable conditions in mountain agroecosystems and that have an important role in preservation of traditional pasture systems in mountain and hilly regions; building of institutional capacities and acquisition of practical experience in implementation of measures of support to traditional races, in keeping with the similar measures in the EU.

This Programme, among other things, provides the list of races for which the right to financial support can be obtained. This list was completed according to the threat status of these races, and in keeping with the FAO World Watch List for Domestic Animal Diversity and the Article 27 (4) and Annex IV of the EU Regulation (1974/2006). The list includes the following races: domestic mountain pony, nonius, Balkan donkey, Busha cattle, Podolian cattle, domestic buffalo, Mangalitsa pig, Morava pig, Resava pig, various types of Pramenka sheep, Čokan Tsigai sheep, Balkan goat, Svrljig hen, Sombor hen, and Novi Pazar goose. The Programme foresees the conditions that keepers of these races have to fulfil in order to gain the right to use funds from the Programme. Draft particularly stresses the need to keep a status inventory and to give support to conservation of plant genetic resources, particularly through the development of the National Programme and the insurance of the measures for its implementation.

***Animal Husbandry Development and Improvement Programme** in the Republic of Serbia for 2008-2012 suggests the intensification of cattle breeding for the purpose of rational use of agricultural resources, and conservation of genetic potential of autochthonous races.

*The project **"Support to Development of the National Programme for Plant and Genetic Resources for Food and Agriculture"** is in the preparatory phase. This project will last until the first half of 2011, and it will be realised for the purpose of conservation of rare and threatened plant resources of the Republic of Serbia. The Programme was adopted by FAO in 2009. FAO expertise during this period will significantly contribute to the development of the National Program for plant genetic resources, and to its adequate implementation after its finalisation. This national programme will provide necessary means for the development of national action plans and long-term strategies.

According to the data of the Statistical Office of the Republic of Serbia, the state owns 5,096,646 ha of agricultural land, which makes 65.8% of its total surface area. Monitoring of areas of agricultural land in the period 2000-2009 shows the decreasing trend for areas under arable land, gardens, and vineyards, and the increasing trend for areas covered by meadows.

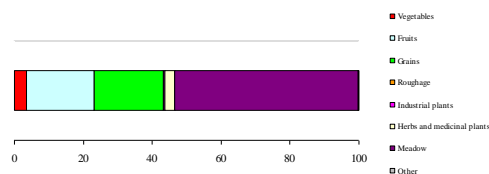
Table 1: Agricultural land areas

Year	Agricultural land – total	Agricultural area					Pastures	Fishponds, reeds, and ponds
		Total	Arable land and gardens	Orchards	Vineyards	Meadows		
2000	5109	4259	3356	245	71	587	815	35
2001	5111	4255	3355	243	69	588	821	35
2002	5107	4255	3351	245	69	590	817	36
2003	5115	4253	3345	246	67	594	826	36
2004	5113	4252	3344	244	66	598	823	38
2005	5112	4242	3330	239	64	609	832	38
2006	5105	4228	3318	238	62	610	838	39
2007	5092	4218	3299	240	59	620	835	39
2008	5093	4222	3302	241	58	621	833	38
2009	5097	4224	3301	240	58	625	834	39

Livestock density per unit of agricultural land represents an indicator of environmental pressure. Large density can trigger a specific environmental pressure, particularly if intensive agricultural production is combined with the import of livestock food and intensive input of fertilizers and pesticides. Distribution of most significant cattle species shows that the environmental pressure is the highest in central and western parts of Serbia, which are mainly hilly/mountain areas.

BOX 1. Case study: Area under organic farming

Organic production is based on biological balance of the system soil-plant-animal-human. It represents a holistic system of production that promotes and strengthens the agroecosystem, health, biodiversity, biological cycles, and soil. The accent is on using the input from farms, taking into account that regional conditions require locally applicable systems. This can be realised by using, where possible, cultural, biological, and mechanical methods, which is contrary to usage of synthetic material in order to fulfil specific functions in scope of the system.



Total area under organic production in Serbia

According to the data provided by the Ministry of Agriculture, Forestry, and Water Management, the total area of agricultural land where methods of organic production were applied in 2009 is 2,876.49 ha. Of this, 2,388.27 ha or 0.057% of arable land is in the period of conversion, which is a time period necessary for the transition from conventional production to organic production, while 488.22 ha or 0.011 % of arable land is under certified organic production. The total share of area where methods of organic agriculture are applied represents 0.068% of the total arable land.

Case study: Development of agriculture and tourism within the framework for sustainable protection and management of the Special Nature Reserve

The main objective of the project "Protection and Management of the Special Nature Reserve Zasavica as a Tool for Sustainable Rural Development" was to integrate the protection and management of Zasavica with sustainable rural development and particularly with the development of sustainable agriculture and tourism. With the growing interest for protection and maintenance of semi-natural areas, there is an increasing need to develop capacities for managing protected areas. This counts in particular for landscapes and biodiversity related to various forms of grazing, which existed and still exists in floodplain meadows, fen meadows, and alpine meadows. The aims of this project proposal were to help the Nature Conservation Movement (non-governmental and non-profit organisation that has taken up the responsibility for the management of the Special Nature Reserve Zasavica) to elaborate the management and development plan, which will give directions for the development of agriculture and tourism within the framework for sustainable protection and management of the Special Nature Reserve.

An additional objective of the project was to support the survival of two endangered native cattle breeds that were originally grazing in the floodplains of the Sava River from where only a small number of animals have survived. These are the "swallow-bellied Mangalitsa pig" and the "Podolian cattle", which are both on the FAO list of native breeds threatened with extinction. The project aims to promote the reintroduction of these species in farm households in the surroundings of the reserve and the use of these animals to maintain the floodplain meadows by grazing, as a contribution to the management of the biodiversity of floodplain meadows.

The proposed project was carried out in close cooperation with the Institute for Nature Conservation of Serbia and the Ministry of Environment and Spatial Planning of Serbia.

The immediate objectives of the project were:

1. To elaborate an integrated management and development plan for the Special Nature Reserve Zasavica based on methodologies of the Birds and Habitats Directives and with active involvement of local stakeholders.
2. To develop sustainable agriculture and tourism as a tool to support management of the Special Nature Reserve and to develop local and regional rural economies and livelihoods.
3. To improve organisational and institutional capacities of organisations involved in sustainable management and development of protected areas in Serbia.

Specific project products were:

1. Management and Development Plan for the Special Nature Reserve Zasavica as a replicable model for management plans of protected areas in Serbia based on methodologies of the EU Habitats Directive and other relevant international conventions, including development strategies for sustainable agriculture and tourism and a plan for restoration of the area hydrology.
2. Strategy for survival, reintroduction, and use of the *swallow-bellied Mangalitsa pig* and the *Podolian cattle* in farm households as a contribution to the management of the Special Nature Reserve and to the viability of the small farm households.
3. Improved facilities and opportunities for eco-tourism through targeted investments.
4. Recommendations for organisational and institutional set-up of management of protected areas in Serbia.
5. Increased capacities of organisations and individuals involved in management of protected areas, including stakeholders involved in management planning, biodiversity management, monitoring, awareness raising, information dissemination, and communication.

8. Forestry

The Forestry Development Strategy from 2005 sets conservation and improvement of biodiversity in forest areas as one of its goals, as a part of the concept of sustainable forest management. The strategy foresees the elaboration of the National Forestry Programme, as an action plan. Before the development of this Strategy, the Republic of Serbia did not have a comprehensive, founded, and defined development strategy, but it was defined through legal regulations and specific strategic documents, as a basis for the sector development. The basic goal of the Strategy is to preserve and improve the state of forests and to develop forestry as an economy branch. The Strategy recognises the importance of the forestry sector and forests in conservation and improvement of the environment and in nature protection; thus, conservation, real improvement, sustainable use, and valorisation of forest biodiversity are among major objectives, as well as improvement of sustainable forest management in protected natural assets, in keeping with coordinated and accepted international standards and the National Strategy for Sustainable Development.

The Law on Forestry ("Official Gazette of RS" No. 30/2010) defines the ban of woodcutting, destroying

young trees, and seed collecting of strictly protected and protected species of forest trees, determined by a special regulation on nature protection, except in the case when they represent a source of illnesses or pests, or if they impose a threat to humans and objects.

Forests in Serbia are managed by public enterprises. The largest areas are covered by: "Srbijašume", "Vojvodinašume", and National Parks. PE "Srbijašume" incorporates 17 Forest Economies, and PE "Vojvodinašume" 4.

The total area of commercial forests in Serbia covers around 1,700,000 ha, or around 90% of the total forest area.

The management of legally defined forest areas is devolved to public enterprises. The forestry development concept is based on integral management of forest ecosystems according to the principles of sustainable development and profitability, which along with the maximal use of forest resources implies conservation of forest ecosystems and richness of biological diversity. Public enterprises that are authorised for forest management realise expert and technical activities in private forests as well, over the area of more than 800,000 ha.

For forests and forest land owned by state (more than 1,100,000 ha) that are assigned to public enterprises, the Specific Management Basis is elaborated every 10 years, which is approved by the Directorate for Forests of the Ministry of Agriculture, Forestry, and Water Management. The forest area in Serbia covered by planned management documents includes around 900,000 ha, or 48% of the total forest area, and 53% of the total area of commercial forests.

Forest monitoring

The operational and management responsibilities for forestry have been devolved to "Srbijašume" and, since the end of 2002, also to "Vojvodinašume", forming two public enterprises for forest management in the country. The stewardship over 242,439.85 ha of protected areas (almost 40% of the total protected area in the Republic of Serbia) is assigned to PE "Srbijašume". It realises the following activities in protected areas: labels protected natural welfare, provides guardian service and protection, puts into effect determined regimes of protection, organizes scientific and other activities.

Faculty of Forestry issued the publication "Heavy metals in forest ecosystems of Serbia" in 2002. At the end of 2004, the Directorate for Environmental Protection and Directorate for Forests of the Ministry of Agriculture, Forestry, and Water Management published "Forest condition monitoring in the Republic of Serbia, Level I (Biomonitoring)". This publication is the annual report of the study results obtained in 2002/2004 during the monitoring program "ICP Forests in Serbia (Level I)". Forest tree crown condition and soil chemistry (and some foliar analysis) were studied at 103 sampling spots in 16x16km grid determined in keeping with the ICP methodology. The Institute of Forestry performed forest condition observations in central Serbia, while in Vojvodina, the Poplar Research Institute in Novi Sad was in charge of monitoring and assessment. The Faculty of Forestry in Belgrade was responsible for the soil study. Obtained data were submitted to the relevant European institution Programme Coordinating Centre (PCC) in Netherlands and to Forest Soil Coordinating Centre (FSCC) in Belgium.

Forest protection

In state owned forests in Serbia, 1,017 ha of seed stands were sorted out for the purpose of reproduction, which makes the best regionally representative seed stands among them well protected, and their reproduction is regulated in keeping with the principles of nature conservation.

The surface area of forests under any type of protection, managed by public enterprises, is more than 410,000 ha, which is around 22% of the total forest area. The largest part of this surface area (around 75%) is used for commercial purposes in keeping with the planning documents (Special Management Bases).

It should be mentioned that the surface area of more than 500,000 ha in Serbia is under some type of protection, which means that more than 80% of protected areas is covered by forests.

The surface area of forests under 1st and 2nd degree of protection in protected natural assets managed by public enterprises is 83,000 ha, which represents around 4.5 % of total surface area covered by forests. Around 15,000 ha of forests or around 1% of the total forest area is under the 1st degree protection regime, which signifies that no commercial activities are performed. Under the 2nd degree protection regime, there are also no commercial activities apart from reproductive-sanitary measures projected by planning documents.

As a result of the state of concern in forestry management, the project "Institutional Development and Capacity Building for the National Forest Programme of Serbia" started in April 2003. It was initiated by the Ministry of Agriculture, Forestry, and Water Management – Directorate for Forests, and supported by UN FAO. One of the main goals of the Project was to formulate the Forest Policy document.

Other projects also started in the last two years, among which the projects related to the inventory of forests and introduction of the GIS technology in forestry, financed by the Norwegian Government. There are also several regional projects – the project supported by the European Forest Institute focused on advanced education in forest policy and economy, the project for development of the forest sector in Serbia financed by the Finnish Government, and others.

Forest exploitation

The wood volume in forests of Serbia comprises around 363 million m³, which is around 161 m³/ha. In deciduous forests it is 159 m³/ha, and in coniferous forests 189 m³/ha.

The volume increment is around 9 million m³, which is around 4 m³/ha. In deciduous forests it is 3.7 m³/ha, and in coniferous forests 7.5 m³/ha.

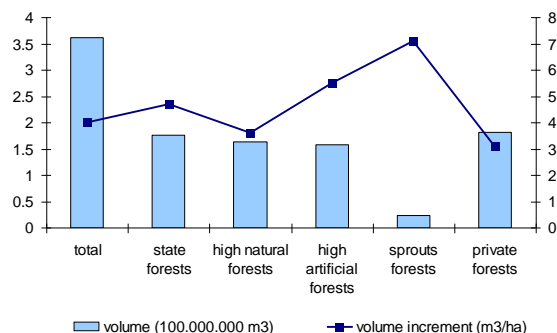


Figure 1: Volume and volume increment in Serbian forests.

Woodcutting equals to approximately 2.6 million m³. Along with the non-registered woodcutting, sustainable woodcutting ranges from 1/3 to 1/2 of the volume increment, which can be considered as sustainable. The ratio of firewood and industrial wood at the global level equalled 51.2 : 48.8 for 2005, while in Europe this ratio was 17.8 : 82.2. In Serbia, this ratio in 2005 was 52 : 48, with an increasing trend of industrial wood ratio, which commenced in 2003.

9. Fishery

The Law on Protection and Sustainable Use of the Fish Stock ("Official Gazette of RS" No. 36/2009) and the Decree on Measures for Conservation and Protection of the Fish Stock ("Official Gazette of RS" No. 104/2009) protect specific species of fish.

The Law on Protection and Sustainable Use of the Fish Stock has the following objectives: (i) management of the fish stock in fishing waters, including protection and sustainable use, fishing, and trade of fishes; (ii) sustainable use of fishery resources that contributes to biodiversity conservation; (iii) definition of conditions for commercial, recreational, and sport fishing, as well as fishing for scientific purposes and electro-fishing; (iv) definition of conditions for trade of fishes; (v) development of efficient control that includes rights, duties, and authorisation of inspectors; (vi) more strict penal policy ("Official Gazette of RS" No. 36/2009).

The Decree on Closed Season was issued in 2009, and it defines species for which permanent closed season is enforced, species for which limited closed season is enforced, ban of fishing below defined size, as well as maximum allowed quantity of daily catch.

All fishing waters in Serbia are organised into six fishing areas, devolved to users, selected by a tender containing defined legal conditions and obligations, for a period of ten years. For each fishing area, the type of fishing is designated, recreational and commercial, or only recreational. Management of fishing areas is realised by enterprises with any form of ownership that satisfy legally prescribed conditions.

The National Strategy of Sustainable Use of Nature Resources includes fishery resources as well. Its aim is the sustainable use of fishery resources in fishing waters of Serbia, with full respect of ecological and socio-economic principles. The use of fishing resources should be done with such rate and regime that will enable maintenance of economic stability of fishing waters and high densities of exploited populations, in order to keep such production and harvest that will secure ecosystem stability during a long time period. In this way, the role and function of fish stock of important fish species will be preserved, as well as its overall potential to fulfil the needs of present and future generations. It is expected that the trend of exploitation of fishery resources in Serbia will result in further increase of recreational fishing and maintenance of commercial fishing at the level that is ecologically and socio-economically acceptable.

The number of sport fishermen in Serbia is about 100,000, and this represents the increase of about 10% since 2006. There are more men than women in sport fishery.

The percentage of sport fishermen is around 1.2% and it is almost the least in Europe; however, sport

fishing in freshwaters is increasing in Serbia.

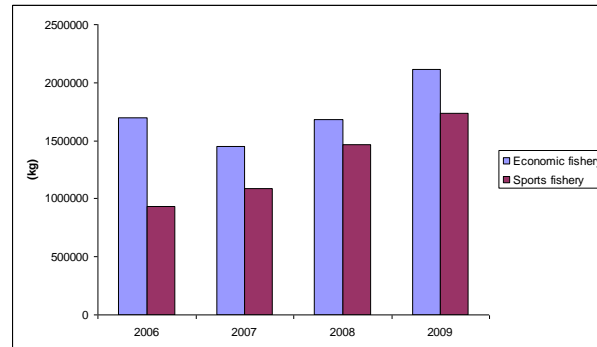


Figure 2: Structure of fishing (blue – commercial fishing, red – sport fishing)

The analysis of fishery by the type of fishing indicates that the commercial fishery increased for about 25% in the past 4 years, and the sport fishery for about 85%!

10. Hunting

So far, the strategy for hunting development was non-existent in Serbia, and this activity was defined through legal regulations and several strategic documents that served as a basis for the sector development. The legal framework of the sector development is the Spatial Plan of the Republic of Serbia, along with the Law on Game and Hunting (2010). Since the global hunting policy underwent significant conceptual changes, from exclusively commercial orientation to biodiversity protection, a clear necessity to develop the National Hunting Policy of the Republic of Serbia, as a long-term strategic document, has arisen. The Law on Game and Hunting defines conditions of use, management, protection, and improvement of game populations and their habitats. The draft version foresees issuing of the Game and Hunting Management Strategy of the Republic of Serbia, issuing of planning documents, as well as development of the monitoring and information system on game populations and their habitats. It is very important to emphasize that there is no legal decree on state taxes for exploitation of game animals as a natural asset.

Hunting is a frequent activity in Serbia. It is monitored through a number of status indicators (number of game animals, etc.), pressures (number of hunters, hunting grounds, catch, etc.), responses (secured benefit, breeding, introduction, feeding grounds, etc.), of which some are available, and some should be developed in the next period.

The number of most important game animals shows a decreasing trend in the last twenty years.

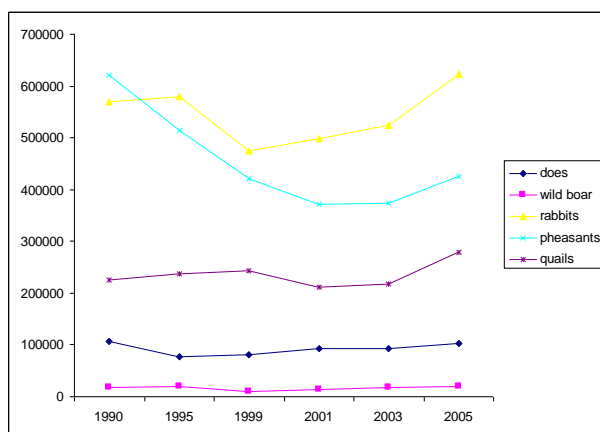


Figure 3. Number of game animals

The number of all most important game animals in hunting grounds of the Hunting Society of Serbia is decreasing. The number of small game animals is particularly decreasing, ranging from 2 to 10%, while the decrease of large game animals ranges from 3 to 6%.

The estimated population size of mouflon is relatively stable in the period 1999-2003 (around 650), while the number of chamois (100-400) and brown bear (24-81) varies from year to year, due to both migratory behaviour of these species and to relatively small population size, which increases the estimation bias.

Although grey wolf is a species that is a very good indicator of environmental state, there are no data on population size in Serbia, yet numerous indicators of caused damage point to a presence of a large population. Rough data on annual catch range from 170 to 180 individuals. In Vojvodina, grey wolf is under the regime of permanent protection, while in central Serbia there is no closed season for this species.

11. Water resource management

The Republic Directorate for Waters, as an authority in scope of the Ministry of Agriculture, Forestry, and Water Management, performs the duties of state management and expert jobs, which are, among other things, related to implementation of measures of water protection and management of water regimes. Through the Law on Waters, the Public Water Economy Enterprise "Srbijavode" was established. Certain authorities in scope of water economy were passed in 2002 to AP Vojvodina after the formation of the "Public Water Economy Enterprise Vode Vojvodine". These two enterprises manage water resources in Serbia.

After the Convention on Cooperation for the Protection and Sustainable Use of the Danube River ("Official Gazette of SCG – International Conventions" No. 4/03) and the Framework Agreement on the Sava River Basin were ratified, the questions on joint management plan development for river basins were covered, particularly those with international character.

One of the activities that lead to harmonisation with the EU Standards is the application of the EU directives related to water management, particularly through cooperation in scope of the ICPDR, the

Danube River Commission, and the International Sava River Basin Commission. The Republic of Serbia became a member of the International Commission for the Protection of the Danube River (ICPDR) in 2003, and ratified the Convention on Cooperation for the Protection and Sustainable Use of the Danube River. In December 2009, the Danube River Management Plan with the measure programme was adopted, through which member states were obliged to realise these measures by 2015. In scope of the trans-boundary cooperation in water management sector in the Sava River basin, the Republic of Serbia takes part in the International Sava River Basin Commission (Sava Commission) since its establishment in 2005, as a body authorised for implementation of the Framework Agreement on the Sava River Basin. The strategic goal of the Framework Agreement is to create conditions for sustainable development of the region in the Sava River basin, through the establishment of the integral and sustainable management of waters in the basin.

In June 2009, the European Commission received the mandate from the EU Council to develop the Joint Comprehensive Strategy for the countries of the Danube River Basin, which is expected to be prepared by August 2010, in order to finalise the internal procedure of its adoption in the EC by the end of 2010. Formal adoption of the Joint Comprehensive Strategy for the countries of the Danube River basin could follow in the first half of 2011.

Through the coordination of the Sava Commission, the proposition of the project "Biodiversity and Ecological Status of the Alluvium, Water, and Biota in the Sava River Basin" is under preparation, the implementation of which is planned in scope of the second cycle of the Sava River Basin Management Plan.

The new Law on Waters, adopted on 5. May 2010 ("Official Gazette of the RS" No. 30/2010) defines the Strategy of Water Management and Protection of Waters from Pollution.

12. Energy

The Law on Energetics ("Official Gazette of RS" No. 84/04) was issued in 2004, and it was the beginning of the reformation process of the energetics sector, with the aim to enable preconditions for development and efficient activities of all subjects in the field of energetics, and to harmonise this law with the EU regulations.

The elaboration of the Law on Rational Use of Energy is under way, the finalisation of which is expected in 2010. According to the set of laws related to environmental protection, which came into force in 2004, it is the responsibility of the PE EPS to coordinate the activities of its subjects with their clauses by 2015. This means that the national regulations, which will be harmonised with the EU, will also demand the application of protection measures in keeping with the best available techniques (BAT) for new objects and revitalised objects.

The Law on Air Protection ("Official Gazette of RS" No. 36/09), adopted in 2009, comprehensively defines the management of air quality, as well as measures that will prevent the emission of pollutants into air. The law also provides a basis for elaboration of sub-acts that will regulate the emission control

for greenhouse gases and gradual elimination of substances that deplete the ozone layer.

Two conventions were ratified, which oblige us to report air emissions: the Convention on Long-Range Transboundary Air Pollution – CLRTAP with the EMEP Protocol (1987) and the UN Framework Convention on Climate Change UNFCCC (1997) with the Kyoto Protocol (2007).

The Republic of Serbia is a member of the UN Framework Convention on Climate Change (UNFCCC) since 2001. The Kyoto Protocol came into force for the Republic of Serbia on January 2008.

Through the ratification of the Treaty on Establishing the Energy Community (2006), Serbia has, among other things, accepted the duty to issue and realise the plan to apply the directive 2001/77/EC on promotion of electricity produced from renewable energy sources, and directive 2003/30/EC on promotion of use of biofuels or other renewable fuels for transport. On the other hand, it fulfilled the conditions to use the technology transfer and financial consulting related to RES.

From the aspect of environmental protection, the adoption of the following documents was significant:

- Strategy for Introducing Cleaner Production in the Republic of Serbia (2009)
- National Environmental Protection Programme (2009)
- Adoption of the Kyoto Protocol (2009)

State and trends

In the period 2002-2009, production of the primary energy is in constant slight increase. According to the estimates of the Ministry of Mining and Energy, the production in 2009 equalled to 9.70 million TOE (tonnes of oil equivalent), which is for 3% higher than in 2008.

The period from 2002 to 2007 is characterised by an increased consumption of the total primary energy (total primary energy is the sum of produced and imported energy), as well as by the domination of fossil fuels (coal, oil, and gas) in consumption.

Although the portion of the renewable energy sources in the energy consumption is only 7%, from the aspect of environmental protection and energy safety, the constant increase is encouraged. During the last few years, the renewable energy sources have an increasing role in energy production.

The Republic of Serbia has the potential to produce 4.3 million TOE from renewable sources, but in 2009 only 1.28 million TOE was produced, which makes around 30% of the potential.

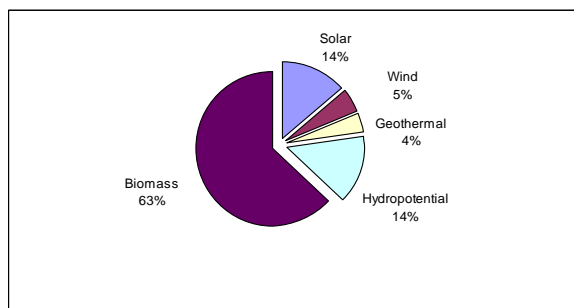


Figure 4: Renewable potentials in Serbia.

The ratio of renewable energy sources in consumption of the total primary energy in 2009, in comparison to previous years, was slightly increasing, but it is still at the very low level of 8.6%.

13. Mining and Industry

In order to overcome existing problems in environmental protection, the aims of industrial policy were defined, among which is the improvement of ecological standards in production processes. The Law on Regional Development (2009) foresees the measures for stimulation of the regional development, related to improvement of environmental protection.

The Strategy for Introducing Cleaner Production in the Republic of Serbia (2009) elaborates the national concept of sustainable development, through encouragement of cleaner production. During 2009, the Eco-Management and Audit Scheme (EMAS) was promoted as a voluntary measure to interested organisations and chambers of commerce.

The Project of Cleaner Production realised by the Centre for Cleaner Production under the auspice of UNIDO and with the support from the Ministry of Environment and Spatial Planning and the Chamber of Commerce of Serbia, started its activities in 2007. One of the results is the development of the "Strategy for Introducing Cleaner Production in the Republic of Serbia" (adopted in March 2009), which elaborates the national concept of sustainable development, through encouragement of cleaner production. The cleaner production according to the UNIDO methodology was introduced in 26 companies.

From the aspect of environmental impact, the problem is that the largest share in industrial production belongs to "dirty industries": production of food and beverages, production of chemicals and chemical products, production of basic metals. The total share of "dirty industries" in the total industry in 2009 is estimated to over 50%.

The Eco-Management and Audit Scheme (EMAS) was promoted as a voluntary measure. In 2008, directives relate to EMAS were translated into Serbian. During 2009, the Eco-Management and Audit Scheme (EMAS) for industrial objects is promoted as a voluntary measure to interested organisations and chambers of commerce.

In 2009, the "Rulebook on closer conditions and procedure of obtaining the right to use the ecological sign, and on elements, image, and use of the ecological sign for products, processes, and services" was issued. Groups of products and criteria for groups of products for the national eco-sign will be the same as for the eco-sign of the EU (Flower); thus, in the moment of the accession to the EU we will have the complete infrastructure for the "Flower", and the national eco-sign may then further develop independently. During 2009, two enterprises submitted the request for obtaining the eco-sign.

14. Tourism

The new Law on Tourism was issued in May 2009 ("Official Gazette of RS" No. 36/09), and it prescribes and coordinates conditions and ways of planning and development of tourism. The Law also foresees the proclamation and sustainable use of tourist areas. If the tourist area is within the area of a protected

natural asset, then regimes of protection and internal order are applied in keeping with the regulations that define conservation and use of the asset.

The Strategy of Tourism Development in the Republic of Serbia ("Official Gazette of RS" No. 91/06) emphasizes the concept of sustainable development, where natural resources hold possibilities for reaching commercial and other objectives in tourism. In order to realise this Strategy, 15 master (business) plans were elaborated for selected tourist destinations, which register the potentials for the development of tourism. Two types of tourist offers, among a number of others, are interesting for their significant potential for biodiversity and rural economy:

- Mountain and lake resources
- Rural tourism

The Strategy outlines that mountains and lakes are the strongest potential tourist product, from the aspect of resources, but are almost non-existent from the aspect of infrastructure and marketing.

Significant investments in physical infrastructure, training, and visibility are necessary in order to attract tourists to mountain areas in both summer and winter periods.

The rural tourism is another important product of the future tourism in Serbia, as it emphasizes the commitment and orientation towards nature and development of sustainable tourism. Though not sufficiently competitive, its potentials are evident: rich nature, its resources, arable land, significant share of rural population, non-polluted environment, potentials for production of organic and "healthy food", possibility for complementary activities like horse riding, traditional gastronomy, etc. Its development potentials are emphasized through better protection of cultural heritage, nature resources, traditional architecture, and way of life, which are all preconditions for balanced socio-economic development of rural areas.

"Sustainable Tourism in Function of Rural Development" – joint programme of UN agencies – is the largest UN project dedicated to development of tourism worth four million dollars, and financed by the Millennium Development Goals Achievement Fund. The Project will be realised in the next 2.5 years, in three phases.

Like other economy branches, tourism influences the quality of environment as a consumer of natural and other resources: land, water, fuels, electric energy, and food, as well as a producer of a significant amount of waste and emissions. The negative influence of tourism to environment is expressed through the pressure on natural resources, biota, and habitats, and through production of waste and pollution.

On the other hand, tourism has a great interest to maintain the quality of the environment at a high level, since the clean and healthy environment is one of the important prerequisites of its successful development. Positive effects of tourism on the environment reflect in the fact that this is the activity that strives toward adequate use of natural resources, improvement of landscapes, and maintenance of ecological, economic, and socio-cultural values of the local community.

The features of the territory of Serbia, its natural and artificial values, make a good predisposition for the modern concept of tourism. The main tourist activities include tourism in large cities, spa tourism, mountain tourism, tourism related to special interests (cultural assets, natural assets, hunting, fishing), rural tourism, river tourism (particularly on the Danube).

Compared to 2007, in 2008 a slight decrease of tourist visits and overnight stays was recorded at the annual level, which is probably the consequence of reduced financial possibilities of the population. Domestic tourists constantly prevail in the tourist structure.

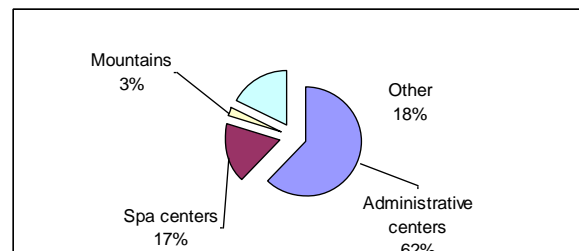


Figure 6: Tourists visits in Serbia in 2009.

In 2009, the majority of tourists visited the main administrative centres, while, according to the data for 2008, tourists mostly stayed in spas and mountain centres (32% and 26% of the total tourist overnight stays, respectively).

15. Traffic

Considering the future inevitable increase of all types of vehicles, planned by the Strategy for Traffic Development, it is necessary to seek solutions for coordination of their use with ever more strict requirements for environmental conservation.

According to the analyses done for the Strategy for Development of Railway, Road, Water, Air, and Intermodal Transport in the Republic of Serbia from 2008 to 2015, Serbia significantly lags behind the infrastructure reforms in comparison to the neighbouring regions and the EU. The aspect of environment was introduced into the Strategy and it is presented in the first principle of the traffic development – Transport strategy must be focused on life quality, environmental conservation, welfare, and mobility.

It is necessary to incorporate requirements for protection of biodiversity/nature into the plans for the development of traffic infrastructure, both through ecological optimisation of traffic corridors and through practical protection measures (securing the passages for wild animals on routes of their usual daily or seasonal migrations, construction of fish paths, securing the afforestation/planting in the zone of traffic impact, securing the functioning of drainage and sewage channels, and positioning of noise barriers in places of direct traffic impact).

The level of traffic development represents an indicator of commercial activities and competitiveness of industry and services, and it is a relevant factor of the European integration. Its role is multifunctional: it influences the development of territorial division of labour, encourages fast development of various

economy branches, promotes regional development, and initiates development of underdeveloped countries.

In the previous period, from 2002 to 2009, the scale of transport was increased in all traffic sectors, and the basic promoter has been the cargo transportation. Considering the passenger transport structure, the road passenger transport dominates, and considering the cargo transport structure, the railway cargo transport dominates.