

## Institutional Profile of the Ministry of Agriculture, Forestry and Water Management, Directorate for Water, Republic of Serbia

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### 1. Basic information

Country:	Serbia
Official name or designation of the institution:	Ministry of Agriculture, Forestry and Water Management; Directorate for Water
Website and mailing address of the institution:	<a href="http://www.minpolj.sr.gov.yu">www.minpolj.sr.gov.yu</a> Ministry of Agriculture, Forestry and Water Management; Directorate for Water; Nemanjina 22-26; 11000 Belgrade
Project application documentation is available from:	<a href="http://www.minpolj.sr.gov.yu">www.minpolj.sr.gov.yu</a>
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### 2. Background and Objectives of the Institution

Despite the impressive growth rate of 7% in 2004 and high rates on following years, Serbia still in this horizon is weak to support serious action in water pollution control or in implementing the EU Urban Waste Water Treatment Directive and other heavy cost water directives of the EU. Therefore improvement of the current situation, particularly having in mind that 95% of the waters of Serbia are transboundary, still greatly depends on international financial support and cooperation with the EU primarily, but also of an efficient use of current national funds. Innovative and modern finances of water management in years to come would be a complementary tool for realization of modern water management. The principal sources for public financing of the investment programmes for improving the water quality and managing of water resources comprise of the following: funds from the Budget allocated to the Ministry for Agriculture Forestry and Water Management (MAFWM) i.e. Directorate for Water (DW), provided from the charges for the consumed water and charges for the water abstraction and polluted water (instead of using the Republic Water Management Fund which abolished in 1997). Via the Directorate for water management of this Ministry the accumulated funds are being channeled for building of the infrastructure projects for water-supply, for the protection of water from industrial and public utilities pollution, cleaning of wastewater and water-collectors; Funds from the Public Water Management Company "Srbijavode", founded by the government of the Republic of Serbia for the purpose of maintenance of the protection of buildings and systems for water-supply, drainage, flood protection etc.

The Law on Ministries (Official Gazette of the Republic of Serbia, No 27/02 - [view law](#)) has set up the Water Directorate of Serbia and it was also set within the Ministry of Agriculture and Water Management and defined its areas of responsibility. The current Law on Ministries defines the Directorate for Water (DW) as responsible government body for the development of water management policy, rational use of water resources, drinking water supply (excluding distribution), flood protection, issuance of permits for water abstraction and discharges, and collection of charges for water use and for discharges into water bodies. The Directorate is also entrusted of water protection and rational consumption of waters, monitoring and maintenance of national and transboundary water flows, and other tasks defined by the *Law on Water*. The

public water management enterprises Srbijavode and Vode Vojvodine were set up to manage water resources, including water catchments and water supply installations, in Central Serbia and in the Autonomous Province of Vojvodina, respectively.

### *The policy framework*

National policy targets for water protection and water resources management are:

- To harmonize national water management legislation with the EU Water Framework Directive, and to introduce emission limit values for effluent discharges according to EU Directive 91/271/EEC on Urban Wastewater Treatment;
- To ensure sustainable use of underground water aquifers, and to establish protection zones for all current and planned water supply sources;
- To ensure that drinking water in urban areas meets the quality standards of EU Directive 98/83/EC on Drinking Water, to extend the centralized water supply to selected rural areas with especially unsatisfactory water quality, and to improve the standards and efficiency of laboratories for water quality monitoring;
- To harmonize national institutional competences for integrated water management; and
- To extend the sewerage system to cover 65 per cent of the population by 2014, to provide wastewater treatment in agglomerations with organized sewerage systems that have significant impact on the recipient waters and especially on sensitive areas, and to upgrade or renew the operation of existing municipal wastewater treatment plants.

The major elements of the national policy and strategy for the water sector are defined in a strategic document: *The Water Master Plan of the Republic of Serbia*, approved by the Government of Serbia in 2001, with a time-line of 10 years; the documents define a strategy of sustainable use and protection of water resources until 2012–2020. The fundamental objectives and tasks involved in water sector reform include the following:

- The adoption of a platform for legislative and institutional reform of the water sector;
- The drafting of the law on water and a new law on water sector funding;
- The institutional and territorial reorganization of Serbia's water sector; and
- The definition of the legal status of ownership of water services.

### *The legal framework*

The most important law governing water in Serbia is the 1991 *Law on Water*, extensively amended in 1995 (OG RS No. 46/1991, [view law](#)); note: the Water Fund seized to exist in 1997. The Law regulates protection of water, protection from water disasters, use and management of waters as a resource of public interest, criteria and methods for conducting water management, organization and financing of water management, and supervision and monitoring of implementation of its provisions. It covers surface waters and underground water, including drinking water, thermal and mineral water, boundary and transboundary waters, and interrepublic water bodies in Serbia. A wide range of by-laws has been developed to regulate water sector issues (see Box 1).

### *The institutional framework*

Serbia's water sector is mostly under the mandates of the MAFWM and the DW. In the Autonomous Province of Vojvodina, the sector is managed by the Provincial Secretariat for Agriculture, Forestry and Water Management. The DW oversees the use and functioning of all water resources, in particular in their monitoring, allocation and protection.

### 3. Organization and Management

Under the DW (which had 60 staff members in 2005) more on the organization and need for the capacity building of DW could be found on following report: [Twining report on Institutional Structures](#). There are two public water companies (PWC) which are the implementing agencies of the DW: [Srbijavode](#) (Serbia Water, with 132 employees in 2005) for Central Serbia, and [Vode Vojvodine](#) (Waters of Vojvodina, with 336 employees in 2005) for the Autonomous Province of Vojvodina. These entities are in charge of managing the water facilities. Field operations are carried out by water services under contractual arrangements with Srbijavode and Vode Vojvodine. Public Water Management Company (PWMC) "SRBIJAVODE", Belgrade was founded according to the Law on Alterations and Amendments of the Law on Waters by merging the three public water management companies: "Dunav", "Sava" and "Morava" in 1996 and began working on January 1, 1997 (the Law on Waters, "Official Gazette of the Republic of Serbia", No. 46/91 and Alterations and Amendments of the Law, "Official Gazette of the Republic of Serbia", No. 73/91, 80/91, 53/93, 48/94 and 54/96). PWMC "SRBIJAVODE" has been established with the purpose of executing the activities related to the water resources of the Republic of Serbia and, according to the Law on Waters, it runs state-owned waterworks as goods for general utilization (Article 81). In mid 2002, based on the Law on the Establishment of Specific Competencies of the Autonomous Province, PWMC "VODE VOJVODINE" was founded with the purpose of executing the activities of water management on the territory of the province of Vojvodina. After reaching the decision to separate parts of the water management centers that operate on the territory of the province, PWMC "SRBIJAVODE" continues to perform its activity on the territory of the Republic of Serbia with the exception of the territory of the Autonomous Province of Vojvodina.

Business program of PWMC "Srbijavode" for the year 2007, in accordance with the activities started in the previous years (2005 – 2006), has three basic objectives: 1. to have business operations and programs of the Public Water Management Company set in line with current laws, primarily the Law on Waters, laws in the field of environmental protection and the assessment of impact on the environment and laws regulating issues of operations being open to the public and equal treatment of all beneficiaries of water resources and other economic subjects in the field of water management; 2. to make sure that the conferred public operations related to water regime management and water resources management, as well as operations related to investing into construction of water management facilities are performed efficiently and in accordance with the market conditions; 3. to improve the quality of the provided services by setting standards, procedures and by securing the transparency of its business. The current Law on Waters intends that the realization of water management activities which are of public interest (apart from international cooperation and drawing up of general plans) are performed by means of PWMC "Srbijavode". This secures the restriction of the management function of the ministry in charge, that is, the National Directorate for Waters from the commercial activities during the realization of the Government's program for the water management issues. At the same time, by means of the Board of Directors and the possibility to form a supervisory board, the indirect control of the activities of the PWMC is secured and the benefits of efficient business conduct according to market conditions are maintained.

According to the budget proposition for the year 2007, the estimated value of works from the Program for Construction, Reconstruction and Maintenance of Water Management Facilities of the Government of the Republic of Serbia amounts to 3.85 billion RSD, while the part of the program which is to be realized through PWMC "Srbijavode" amounts to 2.71 billion RSD, or 70%.

The main problem in the business of PWMC "Srbijavode", when it comes to the management and monitoring the water resources utilization, is the lack of regulations which would precisely state the jurisdiction and procedure when allocating water resources for the purpose of utilization. For years, this has been a major problem in sand and gravel exploitation in river beds, then in utilization of water land and is becoming even more transparent in utilizing mineral waters and constructing small power stations for exploitation of hydro-energetic potential on watercourses. Another important segment in adjusting business operations of the Public Water Management Company with the Law on Waters is establishing control over utilization of water resources. In 2006, it has been planned to establish a new procedure in distribution of rights on exploitation

of sand and gravel from river beds and banks. A model of concessional distribution of rights through public tenders is applied, and the control of exploitation is planned to become the task of the professional sector of the public company, which will be responsible for assessing the impacts on the environment and monitoring the effects of these operations on river courses. There is a need to have this model of control expanded on utilization of waters for supplying population and industry with water, and especially with exploitation of commonly named mineral waters. When availability of information and equal treatment of consumers are concerned, the activities are directed towards the development of an water information system (WMIS) within which all important information will be available for inspection by consumers in real time. First documents to be "open" for external users are Public Acquisitions for granting work and the Book on water utilization (available at [www.minpolj.sr.gov.yu](http://www.minpolj.sr.gov.yu)), which contains all requests, assents and issued approvals for utilizing resources and goods controlled by the Public Water Management Company. An important part of the business plan is related to the internal organization of the Public Water Management Company, especially under conditions when there is conviction that such companies are oversized and poorly organized. PWMC "Srbijavode" should have 219 employees according to the valid job classification, and currently there are 133 employees. In 2007, employment of 7 new workers has been planned and also to have a new classification of job positions by which sectors would be rationalized in order to reduce the total number of employees to 180. A special problem in carrying out the business plan is establishing top quality professional services because of the limitations in the incomes policy. The Financial Business Plan, presented in further chapters, intends to increase the incomes successively during 2007, in accordance with the program and instructions of the Government of the Republic of Serbia, up to the level of 9.0% in relation to the payments in 2006.

Standard operative objectives are the following:

1. Providing power readiness of waterworks for the purpose of protection against floods, drainage of excess waters and providing waters for utilization, in accordance with available financial funds.
2. Managing water regime in such a way so as to prevent harmful effects of waters and provide water for the planned purposes, in accordance with the degree of construction and maintenance of water management systems and waterworks.
3. Further upgrading of the system for the prevention against harmful effects of waters, in cooperation with local self-management, with the following priorities regarding construction:
  - Structures the construction of which has already started and the degree of participation of local self-management;
  - Economic profitability and efficiency of investments in protective structures;
  - Structures that are a technical and technological whole, which protect great social values (residential areas, industries, agricultural areas); and,
4. Cooperation with international financial and other institutions, companies, in order to raise funds for correction of hydro-technical structures that are out of work, as well as to realize development programs.

The realization of this program and its primary objectives, besides the general condition of political and economic stability, requires only to observe the Law on Waters and to carry out the Budget Law for 2007. All other issues and potential terms of realization of the program are within the scope of regular activities of the Ministry of Agriculture, Forestry and Water Management which has the jurisdiction, the Board of Directors and the Management of PWMC "Srbijavode".

According to the Law on Waters, three water districts have been formed on the territory of the Republic of Serbia, which are: the Danube, the Sava and the Morava Water Districts. According to the Statute of PWMC and in order to perform the activities in the water districts, the following water management centers have been established: 1. PWMC "SRBIJAVODE", Belgrade, "Sava – Dunav" water management centre, 3, Brodarska Street, Novi Beograd, in charge of the water area of the Sava outside the AP Vojvodina's territory and of the water area of the Danube outside the AP Vojvodina's territory; 2. PWMC "SRBIJAVODE",

Belgrade, "Morava" water management centre, 2 Kralja Aleksandra Square, Nis, in charge of the water area of the Velika Morava;

Waterworks and other assets managed by PWMC "Srbijavode" are state-owned. Funds for financing water management operations of PWMC "Srbijavode" are provided in accordance with the Law on Waters and Budget Law, from the following:

1. Income of the Public Water Management Company, based on:
  - Compensations for drainage
  - Compensations for irrigation
  - Compensations for utilization of waterworks and for providing other services
2. Funds from:
  - Compensation for utilization of waters
  - Compensation for water protection
  - Compensations for materials extracted from watercourses, which are registered on a separate account of MAFWM, as they are public income, and Budget funds of the Republic of Serbia intended for financing activities of general interest.

Since the early 1990s, the water utility company sector has undergone a major crisis. Low tariffs that do not reflect full cost recovery, coupled with low collection rates, have led to a general deterioration of water assets and poor levels of service. Piped drinking water often fails to meet quality standards, and funds for the extension of sanitation facilities (sanitary networks and wastewater treatment plants) are scarce. Furthermore, 90 per cent of municipalities have not yet implemented protection measures (i.e., sanitary protection zones) for areas used for water abstraction.

#### **Box 1: Legal framework for water management**

- Decree on Classification of Water (OG SRS No. 5/1968)
- Law on Protection against Natural and Other Major Disasters (OG SRS No. 20/1977, 24/1985, 27/1985, 6/1989 and 52/1989 and OG RS No. 53/1992, 67/1993 and 48/1994)
- Law on Use and Protection of Water Supply Sources (OG SRS No. 27/1977, 24/1985 and 29/1988)
- Regulation on Dangerous Substances in Waters (OG SRS No. 31/1982)
- Regulation on the Methods and the Minimum Number of Waste Water Quality Tests (OG SRS No.47/1983)
- Regulation on Sampling and Methods for Laboratory Analysis of Drinking Water (OG SRS No. 33/1987)
- Plan for Water Pollution Prevention (OG RS No. 6/1991)
- Law on Water (OG RS No. 46/1991, 53/1993, 67/1993, 48/1994 and 54/1996)
- Law on Fluoridation of Drinking Water (OG RS No. 35/1994, 38/1994 and 25/1996)
- Regulation on Allowed Concentrations of Hazardous and Harmful Substances in Soil and Water for Irrigation and on Methods for Their Determination (OG RS No. 23/1994)
- Regulation on Regularity of Hygienic Quality of Drinking Water (OG FRY No. 42/1998 and 44/1999)
- Law on Use of Funds for Rehabilitation and Protection against Natural Disasters (OG RS No. 50/1992)
- Law on Water Regimes (OG RS No. 59/1998)
- Law on Planning and Construction (OG RS No. 47/2003)
- Law on Ratification of the Convention on Cooperation for the Sustainable Use of the Danube River (OG FRY No. 2-2/2003)
- General Flood Defense Plan for 2003–2008 (OG RS No. 34/2003)
- Operative Flood Defense Plan for 2006,2007,2008

### *Decision-Making:*

Coordinating Bodies: Activities related to wastewater management in Serbia fall under the jurisdictions of the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia/Republic Directorate for Water (licenses and permits), Ministry of Public Administration and Local Self-government (operation and maintenance of waste water treatment plants and waste water infrastructure) and Ministry of Science and Environment Protection.

Legislation and Regulations: The most important laws that governs the waste water domain in Serbia are the Law on Waters (1991), Law on Environment Protection (2004), Law on Communal Works, and Law on Public Utility Companies. According to Law on Public Utility Companies, they perform: "treatment and disposal of storm water and wastewater". Treatment and disposal of storm water and wastewater means: "collection and disposal of sewage, storm water, and surface water from public areas by means of sewers, drainage channels, or otherwise, treatment and release from the network, channels, drains, and other water disposal structures, sanitation of septic tanks, and collection of used waters from consumers' connections onto the street network and removal via sewers, treatment, and release from the network ". Although certain clauses of the Law on Public Utilities and the Law on Waters address the same or similar issues, they are complementary in terms of jurisdiction. Namely, activities of public utilities are organized by the municipality (or several related municipalities or communities), which sets up public utility companies for the purpose at hand, while responsibility for general strategy of water protection resides with the ministry in charge of water management.

Decision-Making: Strategies, Policies and Plans: The concern of every public utility is to collect and evacuate sewage and storm water from its urban territory. In doing so, public utilities are not required nor are it their responsibility to concern themselves with the general strategy of water supply and sanitation of wider regions or the state as a whole. This responsibility for strategy of water protection in wider regions or the entire state resides with the ministry in charge of water management.

Major Groups Involvement: There is need for much broader involvement of all stakeholders in a process of planning and decision making in waste water management. New Law on Waters pays particular attention to this matter, on principles introduced in Water Framework Directive, and other EU legislation.

### *Programmes and Projects:*

The following donor projects or initiatives are now underway:

- Public awareness programme to assist the water utility companies in reforming from themselves from technical departments into independent providers of public service which operate on a commercial basis. Under a Euro 16 million loan, the Cities of Belgrade, Kragujevac, Nis and Novi Sad are financing investment projects to upgrade their water supply and sanitation infrastructure. In connection with the loan finance, the Cities are also starting to reform their water utility companies from technical departments into independent providers of public service which operate on a commercial basis. In addition, there is a Public Participation and Awareness Programme to assist customers to understand and accept the need for and benefits that will accrue to them from the restructuring, to improve the responsiveness of the water utilities to the needs of customers, to allow the general public to have an input on the design of the water sector reform, to improve the willingness to pay (WTP) increased user charges and to train staff in the Utilities.
- A knowledge transfer of the global waste water sector to water companies and a feasibility study for a selected waste water treatment plant in Belgrade. This two part study comprises a global review of the waste water sector in order to provide general knowledge to managers of current wastewater management practices including recommendations for the introduction of EU standards for wastewater collection and treatment system. The second part comprises a pre-feasibility study for a selected

#### *Financing:*

Funds for waste water management are provided from the water funds and fees paid by the beneficiaries of the waste water systems, budget of local units of self-government, and other sources (state budget, donations, loans by local and foreign banks such as the World Bank and EBRD). Price of waste water and related services is social and political issue at present. However, the conclusion is that with a gradual price increase and an adequate social policy (assistance to the needy from other sources, etc.), economic price of waste water should be established. In order to carry out necessary tasks in the transitional period, investment volume of 100-120 million EUR per annum would be required.

#### *Cooperation:*

Republic of Serbia place the highest importance on the establishment of a new framework for multilateral cooperation, which would be closely linked to and synchronized with bilateral cooperation along the lines of the major international conventions approved during the 1990's, at the time when this country was isolated. This particularly relates to the implementation of the European Water Framework Directive (WFD/2000). The following conventions significant to waste water management were ratified: the Convention on Cooperation in the Protection and Sustainable Use of the Danube River Basin (2003) (Source: Wastewater Country Profile Serbia and Montenegro).

## **4. Revenues**

The mechanisms of financing the programmes and projects relating to water quality and water management improvement in Serbia are defined in detail by Law on Water. The Ministry of Agriculture, Forestry and Water Management (MAFWM) of Republic of Serbia directly recommend and implement the regulations dealing with this matter. The funds necessary for such purposes are collected in a country in accordance with the decrees enacted by the government. 1. Funds are collected through republic budget and transferred to the MAFWM. These funds are directed to the Directorate for Water (DW) and the DW manages the funds earmarked for capital projects relating to water quality improvement. In addition, the Government of the Republic of Serbia signs an agreement with the Public Water Management Enterprise "Srbijavode" which was founded by it, concerning the financing of water protection projects. Apart from these capital projects, "Srbijavode" Public Water Management Enterprise engages mostly in the maintenance of water management facilities and earns its income by collecting fees for the use of water management facilities and systems.

Besides the funds from the Budget, the DW also obtains additional revenue defined by the *Decree Setting the Fee for the Use of Waters and the Fee for the Protection of Waters*, ([view Decree](#)) which is enacted by the Government of the Republic of Serbia and amended and adjusted when necessary. The DW uses a part of this revenue towards the construction of wastewater treatment plants or systems. Revenue is also obtained from the charges set for the use of surface, ground and mineral waters and the charges set for the protection of waters and collected from industries on account of discharged polluted water. 50% or 25% depending on the degree of pollution of the receiver increase the charges. Furthermore, the charge can be decreased by 15% to 30% if the payer of this charge treats the wastewater in the primary wastewater treatment plants prior to discharging it or by 50% to 90% if the latter treats the wastewater in the secondary wastewater treatment plants prior to discharging it. The payers of this charge who have plants for the treatment of wastewater up to the quality set for the recipient are exempt from the payment of charges for the protection of waters. Besides these charges, there are also charges for discharging treated and untreated wastewater in artificial stream i.e. Canals. They are collected by "Srbijavode" Public Water Management Enterprise and used for the maintenance of canals and facilities on them. These charges are payable according to the quantity of wastewater discharged and degree of pollution, as determined by the Decree.

The policy of setting the price for the use of drinking water and the maintenance and construction of water treatment plants is within the competencies of town/municipal assemblies (local governments). The town public utility enterprises manage the systems for the collection and distribution of drinking water and

wastewater collection and treatment facilities. The price of drinking water, maintenance of sewers and maintenance of wastewater treatment plants vary by towns and user category (households, service sector organizations, social welfare institutions, hospitals, and industries). Households pay the lowest price and industries the highest. The public utility enterprises and local governments, subject to the approval of the Ministry of Finance may change these prices. In view of the difficult public welfare and economic situation in past decades these prices also had a social welfare dimension, still the parity should be changed but it has been done step by step. That is also considered to be the one of the important limiting factors to the participation of foreign private capital in the construction of these facilities.

The industries are now paying on a regular basis, which was not the case twenty years ago, however, collected charges for discharge wastewater from the industries and households cannot cover even the cost of regular maintenance of facilities. That is also one of the reasons why priority is given to the construction of town water supply facilities, whereas minimum funds are earmarked for the construction of wastewater treatment plants.

It is from the mentioned financing sources that the MAFWM grants funds for the implementation of the Programme of Construction, Reconstruction, Upgrading and Maintenance of Facilities, and in the scope of that, also funds for the protection of water quality, on a non-repayable basis, up to 30% /40% of the planned cost of capital projects in the current year, while 70% /60% is provided by the developers.

In more detail, according to the Law on Water financing of water management activities are defined from article 99 ff. Means for financing of water management activities shall be provided from the: water use charge, water protection charge, drainage charge, irrigation charge, excavation of material from watercourses charge, use of water management facilities charge and realization of other services, as well as from the means from the budget of the Republic of Serbia dedicated to the financing the activities of public interest. The water use charge shall be paid for the use of surface water, groundwater and mineral water. The means collected from the drainage, irrigation and use of water management facilities charges and realization of other services shall be the revenue of the Public Water Management Company (PWMC). The means collected from the charges for the water use, charges for the water protection and the charges for the excavated material shall be recorded on the special account of the Ministry competent for water management (DW). The amounts of charges are defined by the Government on a yearly basis, upon proposal of the DW then accepted by MAFWM and sent to Governments approval.

Expenditures i.e. activities of public interest which are going to be financed each year are the following:

1. Construction, reconstruction and maintenance of facilities for the protection from adverse effects of water;
2. Construction, reconstruction and maintenance of multifunctional accumulations, hydro-melioration facilities and facilities of regional water supply systems ending at the intake structures of particular users or at users' connections to the public utility of water supply, as well as construction of water supply facilities for the settlements that can not be connected to the regional water supply systems;
3. Implementation of measures of protection of water from pollution (testing of the water quality, construction, reconstruction and enlarging of water treatment equipments and plants, etc.);
4. Protection of the land from erosion;
5. Studies and research projects (the water resources information system, investigation works, preparation of studies, plans, programmes, Water Management Master Plans, water balance, cadastre registers, technical regulation and normative, etc.);
6. Realization of obligations and participation in the international cooperation.

The charge for drainage shall be paid by users or owners of agricultural, construction and forestry lands, lands with thoroughfares and other lands within the melioration area that are directly or indirectly drained. The charge for drainage shall not be paid for lands with embankments for the flood defense, fish ponds and

retentions, channels and other water management facilities that are managed by the Public Water Management Company. The amount of this charge is established according to the amount of drainage costs and maintenance, operation and construction of drainage facilities within the melioration area. The charge is calculated and paid based on the cadastral revenue or per unit (acreage). Rather controversial especially challenged by the Directorate for Forests of the MFAWM drainage charge on forestry land according to the Law on Water should not be lower than half of the prescribed fee for drainage of an agricultural land. The charge for drainage of constructing land shall be paid per unit (acreage), depending on the land use and the water runoff quantity. The revenues collected from these charges are earmarked and could be used according to law only for maintenance, operation and construction of drainage facilities within melioration areas. The charge for irrigation shall be paid by owners or users of lands for which water is provided. The amount of the fee for irrigation is defined based on the amount of costs for maintenance and operation of irrigation facilities and the quantity of abstracted water expressed per cubic meter or per unit of space. The means collected from the fee for irrigation are to be used for maintenance, operation and construction of irrigation facilities within melioration areas. The water use charge is paid by users of surface water, groundwater and mineral water, in proportion to the quantity and quality of abstracted water and in dependence of the purpose of water use. The Public Electric Power Company is paying the fee in proportion to the quantity of produced electricity in hydropower plants. The means collected from the charge<sup>25</sup> for the water use shall be used for the financing of construction of facilities for water supply to the population and to economy and for the regulation of watercourses. Water protection charge shall be paid by companies, other legal entities and citizens, in proportion to the quantity, degree of pollution and the type of waste water or other water with changed properties, or the type of a other substance that is directly or indirectly discharged into surface water or groundwater by which the water quality and possibilities of water use are deteriorated. The means collected from this charge is to be used for the implementation of measures for the protection of water from pollution and waste water treatment. Excavated sand, gravel and other material from bed of watercourses, bars, evacuated channels and banks of natural watercourses, natural and artificial accumulations and areas endangered by erosion is paid based on the quantity of excavated material. The PWMC shall not pay this fee. Fee for excavated sand, gravel and other material is to be used for the construction and maintenance of facilities for the protection from adverse effects of water according to the Law on Water. The means collected from this charge are to be used for the regulation of watercourses. Water management facilities use charges and fees for realization of other services (navigation, production of electricity, etc.) is defined by the PWMC with prior agreement from the Ministry competent for water management. In respect to deadlines for advanced payments of fees, obsolescence, interests, renovation of the legal proceeding, proceeding for compulsory payment of fees and other issues that are not regulated by Water Law, the regulation concerning the corporations income tax apply for companies that have the corporation status, and regulation concerning citizens income tax the shall apply for other fee payers.

According to the latest Household Budget Survey of Statistical Office of the Republic of Serbia for 2005 the household expenditures on domestic water services as a percentage of household expenditures were in urban areas 0.8% in rural areas 0.6% making the national average of 0.8% of household expenditures. (source: [www.statserb.sr.gov.yu](http://www.statserb.sr.gov.yu) ).

There is a range of economic instruments used in the water sector of Serbia, which are, however, mainly designed to raise revenue rather than to pursue environmental protection and natural resource use objectives. At the municipal level, public water utilities are charging for water supply and sanitation services. The Public Water Companies (PWC) raises drainage and irrigation charges as well as levies for the use of water infrastructure. The central government, moreover, raises separate fees for water use (e.g. supply of drinking water) and for water protection (mainly related to discharge of wastewaters), which come on top of the charges raised by the PWC and local water utilities. There is also a fee for the extraction of gravel, sand, and other materials from water courses. Revenues of the PWC, the public water utilities and the central government from the collection of these various charges and fees are all earmarked for water-related expenditures. Water abstraction charges have to be paid by public water supply services, industry, agriculture and other water users for an agreed (permitted) volume of water. Public water services pay only a nominal fee (RSD 0.015/m<sup>3</sup> in 2006) for the abstraction/use of raw water to the public water company, Srbijavode (Serbia Water), which covers Central Serbia, and the newly established public water company for Vojvodina, Vode Vojvodine. The average charge for abstraction of raw water amounted to RSD 0.110/m<sup>3</sup> in 2006.

Surface water abstraction by hydropower and thermal power plants is subject to a fee, which is a fixed percentage of a base price per kWh of electricity generated. This percentage is 2.3 per cent for hydropower plants and 1.3 per cent for thermal power plants; for a base price of RSD 2.11/kWh in 2006, this implies that the water abstraction charge was RSD 0.049/kWh for hydropower plants and RSD 0.026/kWh for thermal power plants in 2006 (see table 1 in section 11 below).

Drainage and irrigation charges have to be paid by owners or users of agricultural, construction and forested land. Revenues from drainage and irrigation charges as well as charges for the use of water infrastructure and other services have to be paid to the PWC (see chapter 5). Water supply and sewage services at the local level are the responsibility of municipal public water services. Sometimes these services are combined with municipal waste collection and disposal services. Although these services are formally independent, their actual power in tariff setting is very limited. They can propose tariffs, but the actual decision is taken by the local government authorities. Tariff setting has therefore often been dominated by political and social considerations rather than creating incentives for change in the behavior of households and enterprises. In addition to the revenues from water supply and sewage services, the municipal services receive part of the revenues from charges paid by households and enterprises for building on constructible land. These fees are designed to contribute to the construction of the required water supply and water discharge infrastructure. In principle, all revenues collected by the municipal water services are to be used to finance the operation and maintenance of the local water supply and wastewater infrastructure and to contribute to investment in new infrastructure. It is, however, quite common that water charges are collected together with charges for other municipal services, such as solid waste collection. The distribution of these revenues among the various municipal services does not always reflect the actual amounts billed, but is based on other considerations. In any case, the revenues of water utilities are far from sufficient to ensure even adequate maintenance and repair of existing infrastructure. This has made the water services very dependent on financial support from the local government's budget and from central government transfers. However, support from these sources has been insufficient to prevent a progressive deterioration of the water sector infrastructure. There have, however, been increases in water supply prices and sewerage charges in many municipalities, which have improved cost recovery since 2002.

Revenues from fines have increased as well. Yet charges and fines in general remain at a level that does not provide sufficient incentives for decreasing water consumption and avoiding or reducing water pollution. On average, the costs of water supply accounted for 0.8 per cent of household expenditures in 2004; payments for sewerage collection amounted to only 0.1 per cent of household budgets. Collection rates are reported to have improved in recent years, but actual statistics are not available. In 2004, the average water charges (drinking water plus wastewater discharge) were RSD 19/m<sup>3</sup> for private households and RSD 44/m<sup>3</sup> for industry. Only some 70 per cent of abstracted water was actually invoiced; and about the same proportion (75 per cent) of water bills were actually paid. In other words, only about half of the abstracted water was actually paid for by the final consumer in 2004. Accordingly, the losses of revenue amounted to some RSD 3.25 billion (or some EUR 120 million) in 2004 (see table 2 in section 11). It has been calculated that in 2004 the price for water (drinking water and wastewater services) would have had to be about RSD 110/m<sup>3</sup> (or EUR 1.5/m<sup>3</sup>) to ensure full cost recovery. Concerns that higher tariffs in the water and wastewater sector were contributing to driving national inflation above the target rate of the Government of Serbia led it, in 2005, to remove the authority of municipalities to set tariffs autonomously. There is now a provision that all municipal tariffs need approval from the central government and that they are not to be raised by more than the official target rate for annual inflation. This measure will make it more difficult for municipalities to recover the cost of water sector services, and it places an additional burden on central and local government finances. Small and medium-sized industrial enterprises located in urban areas typically discharge wastewater into the municipal sewage system and pay a corresponding charge to the local water service. Firms with wastewater treatment facilities pay either reduced charges or, in case the discharged water meets established quality standards, are exempted from payment. There are separate charges for the discharge of pollutants (mainly by larger industrial enterprises) into natural water bodies and man-made channels.

In Serbia, these charges are referred to as charges for water protection, which are collected by the PWC. There are, however, no emission standards for effluent discharges in Serbia. Charge rates are in principle based on the volume of discharges and are differentiated according to the quality class of the recipient water

body. They are, however, too low to affect polluters' behavior. Also, there is insufficient monitoring of the water quality of water bodies, and data on actual volumes of discharged water are lacking. Charges for wastewater discharge vary across industrial sectors, depending on the extent of water polluting activities; the base rates ranged from some RSD 1,860/m<sup>3</sup> for wood industries to some RSD 3,300/m<sup>3</sup> for petroleum and chemical industries (Please see section 11 – statistical data).

#### *Economic instruments in the water sector*

The economic instruments applied in the water sector include abstraction charges, drainage and irrigation charges, water user charges, water protection charges (effluent charges), and charges for excavation of materials from watercourses.

#### *Water pricing*

Water resources management is funded by user charges, water protection charges, and drainage and irrigation charges as well as by charges for the excavation of material from watercourses and by funds from the state budget earmarked for projects in the water sector. The current average tariff for drinking water is EUR 0.25, or one sixth of the estimated tariff of EUR 1.5 that would enable full recovery of costs related to operation, maintenance and new investments. In the last 15 years, the municipal water supply and sanitation sector suffered from budget limitations. As a result, few new investments were made and maintenance was kept to a minimum. Most water and sanitation assets are currently in critical condition and urgently need upgrading, rehabilitation or replacement. Tariffs for water and sanitation services are proposed yearly by municipal water companies to the municipal assembly for approval. Since 2004, the Ministry of Finance has imposed a ceiling on tariff increases: they cannot exceed the programmed inflation rate. Tariffs and fines for wastewater discharge above the authorized limits are very low compared to the costs of treatment facilities, and sanctions for noncompliance are not implemented. Thus there is no adequate incentive for the industrial and agricultural sector to comply with the law. Revenues from drainage and irrigation charges and charges for water resources management have to be paid to the public water company. In principle, revenues have to be used to finance the operation and maintenance of the corresponding infrastructure and to contribute to investment in new infrastructure in this part of the water sector. Charges and charge revenues have in general been too low to permit adequate maintenance of facilities and equipment. Low collection rates, which were an additional obstacle, have reportedly improved in recent years. (Source: [UNECE](#))

## **5. Spending Strategies**

The means collected from the charges and other means provided from the budget of the Republic of Serbia shall be used for activities according to the annual business program (available on <http://www.minpolj.sr.gov.yu> each year). The means referred shall be used for participation in financing of the activities of public interest. The programme referred to construction, reconstruction and maintenance of multifunctional accumulation, hydro-melioration facilities and facilities of regional water supply systems ending at the intake structures as well as water supply facilities for the settlements that are not connected to the regional water supply systems that activities are determined by the Government, after the proposal from relevant Ministries. Within this programme the following are financially supported: the facilities, the types and the scope of works performed on the facilities during the period covered by the programme, the calculation of works' costs, time and investment schedules, amount of participation and other issues concerning construction, reconstruction and maintenance of water management facilities.

Detailed terms and criteria for the granting and spending of the means and the procedure for the allocation of means for this purpose shall be established by the Ministry competent for water management/DW.

The Ministry competent for water management /DW grant the means for construction and execution of other works by the contract, based on the organized tender.

Unspent means from previous year are transferred for the same purposes in the next year.

When competing for funds from the Ministry, the developers (industries, towns, etc.) have to present the following:

- a. Investment Programme and proof of availability of own funds;
- b. Explanation of the investment programme, drawings and specifications and water management authority's approval; and
- c. particulars in accordance with the Ministry's criteria. The Ministry and the developers concerned make agreements on the pooling of assets for joint financing, on the basis of which the Ministry renders the decisions on granting funds.

## 6. Expenditures

Spending by the Directorate for Water has been subject to rather strict segmentation of earmarking of water-related revenues. Revenues from drainage charges are to be used for the operation, maintenance and construction of drainage systems in irrigation and drainage areas. Irrigation charges are used to fund the operation, maintenance and construction of irrigation systems. Water effluent charges are to be used for financing water protection measures and wastewater treatment. Water use charges can be used only for financing the construction of water supply systems and the regulation of watercourses. Data on expenditures for these different categories are not available, but revenues from water use, wastewater charges and levies for extracted materials allocated to the Directorate for Water amounted to some RSD 2.2 billion, or some EUR 7 million, in 2005 (Please see statistical part in section 11).

Municipal revenues for financing of environmental expenditures are limited to their share (60%) of the pollution charges identified in the new EPL. There is no systematic information on the magnitude of central government transfers to support municipal environmental spending. In principle, municipalities are authorized, subject to an "opinion" from the Ministry of Finance, to borrow from domestic banks to finance environmental projects. But there are restrictions concerning the size of the loans and the total amount of debt that can be accumulated. Also, financing conditions are often not favorable, and many (possibly most) municipalities do not have surplus funds for debt servicing. In principle, investment projects should be embedded within a multi-annual financial planning framework, but this appears to be the exception among municipalities in Serbia.

Some municipalities have received loans from domestic banks for co-financing projects which were mainly financed by international financial institutions. These include municipal infrastructure reconstruction in the City of Subotica (European Bank for Reconstruction and Development (EBRD). UNDP, in cooperation with EAR, was also implementing the EU-funded *Municipal Improvement and Revival* (MIR) programme in 11 municipalities in South Serbia, the poorest region of the country. The programme also included the financing of projects related to rehabilitation of water supply networks, water treatment, sewage facilities and solid waste management. It is noteworthy that implementation of projects was conditional upon a 10 per cent financing contribution from the local communities, which demonstrated their commitment to a project. Bilateral assistance amounted to some EUR 130 million in 2005, of which EUR 4.9 million (or 3.1%) was for environmental protection. Of this amount, EUR 3.1 million (or 63%) went to water-related projects.

A main feature of the water sector policy is the current system of highly compartmentalized earmarking of revenues from the various water charges. All revenues from a specific section of the water sector (drinking water, wastewater, etc.) are devoted to spending on the corresponding section of the water sector infrastructure, independently of water sector policy priorities. For instance, more than 50 per cent of the water charges are from wastewater and are therefore spent on wastewater infrastructure, while a small 3.5 per cent are from drinking water charges, so that little is spent to improve drinking water infrastructure even though drinking water quality is the key priority objective. Such compartmentalized earmarking can be a source of inefficiencies because spending in each subsector is dictated mainly by the level of revenues rather than by the relative importance of the various water sector priorities, including environmental priorities.

### **Box 2: The financing of water infrastructures in the municipality of Belgrade**

In the municipality of Belgrade, a special Land Development Public Agency, serves inter alia as a fund for financing the construction of municipal water infrastructure. The revenues of the Agency come mainly from land development fees and a direct city budget allocation for water supply and sewerage. Allocations for water supply and sewerage (and storm water drainage) amounted to some EUR 43 million in 2004, corresponding to some 45 per cent of the Agency's total budget. In addition, the city government's Secretariat for Municipal and Housing Affairs allocated some EUR 8.5 million to water sector financing (support to the local utility company for current operations and maintenance investments as well as co-financing of a KfW project for the rehabilitation of the water supply system). During the past years, the local utility company steadily raised water tariffs to some RSD 40 or 50 eurocents per m<sup>3</sup> in 2004. Improved revenues allowed the utility to start an ambitious rehabilitation of water supply networks in 2004. (mainly to reduce water losses) with a total value of EUR 11 million. Total funds allocated to the water sector corresponded to some 10 per cent of the city budget in 2003. It is noteworthy that the city does not have a water supply or sewerage master plan for planning its investment projects in a coherent framework. But in October 2006, the Land Development Public Agency signed a contract for the construction of a wastewater collection system which should improve communal effluent standards and contribute to the implementation of the *Convention on Cooperation for the Protection and Sustainable Use of the Danube River*, ratified by Serbia in 2003.

However if analysis is to be made about the total amount for the water investments one could find out that for 2008 the amount planned from budgetary sources and revenues of Directorate for Water for 2008 plus various credit lines taken or approved to the many municipalities for the water infrastructure investments, one can find on the Law on Budget 2008 ([www.parlament.sr.gov.yu](http://www.parlament.sr.gov.yu)) the total sum for water investments for municipal as well as for central government level in water sector is 100EUR at least. (authors estimate)

## **7. Funding Cycle**

All "producers" of wastewater can, according to the above stated procedure, use the Republic non repayable funds amounting to 40% of the investment value. This applies to the solutions for agricultural wastewater treatment as well (farms, meatpacking industry, dairy industry, meat products industry, and others, except for the sugar refineries). All owners of installations, state, social, and private have the same rights in reference to applying for receiving funds for building of facilities for industrial wastewater treatment.

As mentioned above, the grants for building of facilities and systems for treatment of all wastewater is provided by businesses and individuals producing wastewater, with the state subsidies which contribute 40% of the amount necessary for the project implementation.

Cities or towns which build systems for wastewater treatment provide their own funds from taxes (or municipal budgets) by means of institutions established at the level of a local community, municipality, or city, under different names (Building Fund, Public Utility Fund, Construction Land and Roads Fund, Head Office for Building etc.) and as main contractors they supply 60% of financial means for the relevant investment. Such investors can be main contractors or they can carry over the business to any other organization, which has human resources and technological means to competently perform the work.

For the purpose of detailed data processing of applications for receiving grants for building facilities for wastewater treatment, the Ministry/DW is asking the main contractors to submit all the necessary documents, and from the Municipal Assemblies it requires that during the procedure of producing proposals for the Ministry Programme they also submit the relevant data important for determining the facilities to be financed by the Ministry.

The main contractors in economy should submit:

- a. the Investment Programme stating the total value amount;
- b. the Outline of the Investment Programme (basic facility data; review of already performed actions; review of the remaining actions; the year of the Project launch; what would be accomplished with the allocated grants; the name of the documentation technical planner; the

- name of the technical documentation auditor; the number of water management approval and the name of the issuer; the number of building license and the name of the issuer; the building preliminary estimates; the investment structure; financial construction; the deadline date);
- c. Enclosures (copy of Water Management approval; copy of the building permit; certificate - the investor's statement about the provision of his finances).

Municipalities should provide the following:

- a. for facilities in the process of construction which receive the Ministry grants (preliminary cost, actions performed until the end of year, the rest of work to be completed; the plan from the Head Office for Building or a Public Utility Enterprise with the investment decision; the financial construction; building permit; Water Management approval);
- b. for new facilities which are competing for the Ministry Programme (according to criteria from the Government Decision; analysis of the existing systems); (c) for the water-supply Programmes where Ministry provides support for local communities (based on the analysis of technical offices, the municipalities themselves give proposals for the priority local communities; technical documentation; readiness of the local community to participate in the building of the water supply system).

When competing for the central government funds for these means the investors are required to furnish:

- a. Full project documentation for implementation with a compulsory clause on the Project Reviewing. In addition to all law regulated licenses and agreements it is important to note that all the project documentation had to meet planning conditions given by the Ministry for Agriculture, Forestry and Water Management/DW, which, upon the completion of the project and revision, issues the Water Management approval for construction of the facility.
- b. Building construction permit.
- c. Guarantee of funds for the construction of the facility.

It should be noted hereby that the investors bear the cost for the production of project documentation - until the moment of competing for the Republic funds (Ministry of Agriculture, Forestry and Water Management/DW). However, when the investment is given the approval, the investor is, through the process of construction, being refunded for the incurred costs in the percentage that follows the whole investment process.

As there have always been more applicants competing for the grants than the investment opportunities allowed, the selection of facilities has been carried out according to the following procedure:

According to the Law on Water, the construction of facilities and systems for water treatment used to be funded by former Fund for Water. When competing for the grants the investors had to present a full project documentation, Water Management approval from the Ministry for Agriculture, Fostering and Water Management, building permit, the investment programme for the phase building (in case the facility cannot be completed in one year) and a proof of liquidity. Out of the received applications the commission of DW members are appointed by the director gives a recommendation to DW management.

Since 1997, all businesses of the Fund for Water have become the responsibility of the Ministry for Agriculture, Fostering and Water Management, Directorate for Water. The elements necessary for submitting applications for using the grants for building facilities are the same as when the Fund for Water operated, with minor changes. The Ministry Expert Office compiles programme proposals, and the programmes are being ratified by the Government of Serbia. On the basis of approved projects, the Ministry and the Investor conclude a Contract on pooling funds for a joint financing, and the Ministry brings a Decision on approval of the funds. (Source: Danube Pollution Reduction Programme – National Review, Federal Republic of Yugoslavia, Financial Mechanisms)

## **8. Evaluation, Reporting and Public Information**

Since, the DW should follow the rules of Law on Budget System according to the regulations the monitoring of its performance is done on regular basis according to accepted international accounting standards, as in a case of other government bodies, by the budget inspection in any time. Not only does the budget inspection sees if the rules of budget system have been applied but the legal inspection is also performing the inspection if the DW has been functioning according to the laws, at any time as well.

Regarding the public information policy of the Government and thus also DW it is prescribed by the that the work of the government body is transparent. Transparency of a work is performed by the open to public of work of DW by publicly announcing of general acts and program of spending as well as yearly reporting on work in accordance with the law on the realization of the funds and completed or started works with the given budgetary funds. Informing of public about the work of is done either by director itself or other nominated by him person. If DW does not perform publicly the director is the responsible person. But most important challenge in terms of public participation would be performed under the framework of harmonization with the EU Water Framework Directive which requires extensive public consultation within the process. More details on obstacles to public participation could be found on following link <http://www.twinning-serbia.org/english/docs/final151.pdf> More details on PP Strategy of WD could be found on following link <http://www.twinning-serbia.org/english/docs/final152.pdf> .

## **9. Major Achievements**

In terms of achievements one can say that thanks to these funds, since the safe drinking water supply of the citizens had the priority in the area of water management in Serbia also in accordance with the MDGs No7 from the report from 2007 (available at the webpage of the MAFWM: [www.minpolj.sr.gov.yu](http://www.minpolj.sr.gov.yu)) the multipurpose dam and accumulation "Prvonek" which was completed in 2005 secured safe drinking water supply of the 100.000 citizens. The other important multipurpose dam and accumulation Rovni/Valjevo which will serve for water supply of Valjevo and other municipalities, is expected to be finished in 2009. The third huge capital investment is the multipurpose dam and accumulation Selova, Kursumlija which is to supply with the safe drinking water in numerous municipalities, it is of importance since this is one of the arid areas of Serbia, it is planned to be finished by 2010.

## **10. Challenges and Future Prospects**

Substantial foreign credits, as well as donations and technical assistance are essential for financing the water protection infrastructure projects. Serbia is now using foreign credits and funds either on a bilateral or multilateral basis, towards financing the water protection projects briefly (60% of the foreign credits and 40% of domestic funds).

It would also be necessary to continue to eliminate in the years to come the disparity of prices, charges and tariffs for the use of water in towns and industries with the aim of higher cost recovery for utility services while using target subsidies to address affordability problems. Moreover, plans are being made for a consistent enforcement of the "polluter pays" principle and introduction of trading in pollution permits, where the permitted environmental pollution level would be set, provision of credits at lower interest rates, encouragement of donations or grants, introduction of environment sensitive areas, provision of export credits for water protection equipment by donating countries, introduction of debt equity swaps in the field of environmental protection, etc.

The authorities have included the transfer of ownership of the water utilities' assets from the state to the local self-government level in the draft Law on Water. They should strive to implement this change as soon as the law is adopted. The incentives for efficient utility resources management, including investments in repair, maintenance and modernization of technical equipment and buildings, would be increased if ownership of

the corresponding assets were transferred to the local government. Due to sustained robust growth, the overall economic context for the conduct of environmental policy has improved over the past years. As regards structural reforms, a major challenge remains the privatization of large State-owned enterprises, an area where progress has been slower than expected. Although there has been progress in price liberalization, the share of administered and regulated prices in the consumer price index (CPI) is still quite high. These include notably prices for heating and electricity, coal and gas, and oil derivatives. In 2005, the central government also decided to take control of tariff-setting in the water and wastewater sector. (Source: [UNECE](#))

The water infrastructure regarding water supply and wastewater management is in a poor state after more than a decade of neglect in the face of limited public-sector spending on maintenance and rehabilitation. Against this background, the authorities face the challenge of applying adequate regulatory and economic instruments for reducing environmental pressures and, more generally, achieving a decoupling of pollution from economic growth. The strategic framework for pursuing all these objectives is provided by the 2002 Water Master Plan (WMP) available in English on twinning web site on documents. The Government has the difficult task of mobilizing the necessary domestic and foreign financial resources to finance the considerable investments required for the implementation of the WMP. Limited progress with the design and implementation of more efficient and cost effective policy in water sector since remains to be a challenge. The “polluter pays” principle although in water sector, contrary to the environment in terms of authority of Ministry for Environment Protection exists for a long time, however, due to the low level of the water charges, and as well to the fact that little is known about the environmental effectiveness of these instruments, they appear to be a blunt weapon especially given the low level of charges, which do not create incentives for changing behavior, and the weak monitoring and enforcement capacities. (Source: [UNECE](#))

The poor condition of the water sector infrastructure and the insufficient coverage of costs of services provided result largely from an inadequate tariff policy. Higher water prices will not only reduce water consumption but also create incentives for investments by water companies to reduce water losses. The adoption of full/higher than present cost recovery tariffs will allow not only better financing of the operation and maintenance of water and wastewater services but also the new investments required to extend them. (Source: [UNECE](#))

## 11. Statistical data

<b>Table 1: Fees for water use, wastewater discharge and extraction of minerals, 2003-2006</b>					
Category	Unit	RSD			
		2003	2004	2005	2006
Water use					
Drinking water					
Households	per m <sup>3</sup>	0.110	0.126	0.137	0.150
Personal needs	per m <sup>3</sup>	0.110	0.215	0.234	0.250
Firms	per m <sup>3</sup>	0.215	0.247	0.269	0.290
Hydropower plants	per kWh	0.034	0.043	0.044	0.049
Thermal power plants	per kWh	0.018	0.023	0.024	0.026
Mineral water / spring water	per litre	0.110	0.600	0.654	0.710
Water abstraction (raw water)	per m <sup>3</sup>	0.075	0.086	0.100	0.110
Wastewater					
Municipal	per m <sup>3</sup>	0.100	0.115	0.125	0.137
Manufacturing industry	per m <sup>3</sup>	1,350-2,400	1,552-2,760	1,691-3,008	1,860-3,308
Thermal power plants					
- with recirculation systems	per m <sup>3</sup>	...	...	...	1929.000
- with open-flow cooling system	per kWh	0.018	0.023	0.024	0.026
Other types of wastewaters	per m <sup>3</sup>	0.700	0.770	0.839	0.922
Extraction of materials (sand, gravel, etc.)	per m <sup>3</sup>	20-50	30-60	33-66	36-73

*Note: Revenues are allocated to the central government budget, section for MAFWM*  
*Source: UNECE (2007), based on Decree on the Amount of the Fee for Water Use, Water Protection and for Extraction of Materials from Watercourses*

<b>Table 2: Water and wastewater charges and revenues of public water utilities, 2004</b>		
Water abstraction		730 mln m <sup>3</sup>
Losses		221 mln m <sup>3</sup>
Invoiced volume		509 mln m <sup>3</sup>
Households		368 mln m <sup>3</sup>
Firms		141 mln m <sup>3</sup>
Water and wastewater charge	<u>RSD / m<sup>3</sup></u>	<u>EUR / m<sup>3</sup></u>
Households	19	0.26
Firms	44	0.61
Revenue (invoiced)	<u>RSD bln</u>	<u>EUR mln</u>
Households	7.0	96.0
Firms	6.2	89.0
Total	13.2	182.0
Revenues (actual)		
	9.8	135.0

*Note: Exchange rate used 1 EUR = 72.6 RSD*  
*Source: UNECE (2007), based on data from MAFWM/WD and Statistical Office of Serbia*

**Table 3: Financing of central government environmental protection expenditure, 2004 – 2006 (mln RSD)**

	Current government budget	Own revenues of institutions	Donations from international organizations	Undistributed government surplus revenues and proceeds from privatization	Total
Directorate for Environmental Protection					
2004	306.4	69.2	27.6	...	403.3
2005	550.4	18.5	150.4	...	719.3
2006	457.9	19.5	64.9	...	542.2
SEPA					
2004	2.7	...	15.0	...	17.7
2005	27.6	...	18.3	...	45.9
2006	21.6	...	...	...	21.6
Recycling Agency					
2004	16.7	...	...	...	16.7
2005	25.2	...	...	...	25.2
2006	34.9	5.0	3.0	...	42.9
Environment Protection Fund					
2005	6.0	36.3	...	...	42.3
2006	45.1	40.0	...	...	85.1
National Investment Plan					
2006	...	...	...	68.5	68.5
Water Directorate (MAFWM)					
2004	1004.1	1299.0	...	...	2303.1
2005	1006.8	2201.6	...	...	3207.4
2006	1306.9	2604.0	...	...	3110.9

*Note: Total expenditures including salaries of employees.*  
*Source: UNECE (2007), based on annual government budget data 2004-2006*

**Table 4: Government environmental protection expenditures in million RSD, 2003-2006**

	2003	2004	2005	2006 estimated
Directorate for Environmental Protection	562.0	405.1	719.3	542.2
Environmental Protection Agency	n.a.	17.7	45.9	21.6
Environment Protection Fund	n.a.	n.a.	5.8	85.1
Agency for Recycling	25.0	16.7	25.2	42.9
National Investment Plan	n.a.	n.a.	n.a.	68.5
Water Directorate	1'906.0	2'300.0	3'207.0	3'900.0
Municipalities	...	...	1'387.1	...

*Note: Above data represent total governmental environmental expenditures according to functional classification of government expenditures as shown in the Serbian government budgets, whereas following expenditure groups have been included in the above table: waste management, environmental protection expenditures and water supply.*  
*Source: UNECE (2007), based on national statistical data*

## Annex 1: Exchange rates

<b>Table 8: End-year exchange rates RSD/USD and RSD/EUR</b>					
	2003	2004	2005	2006	2007
RSD / USD	57.6	58.2	72.6	62.0	55.3
RSD / EUR	72.3	79.4	85.9	81.9	81.4
Sources: <a href="http://www.oanda.com">www.oanda.com</a>					

## Annex 2: Abbreviations used in this profile

CPI	consumer price index
DW	Directorate for Water (at MAFWM)
EBRD	European Bank for Reconstruction and Development
EPL	environment protection law
EU	European Union
EUR	Euro (currency)
KfW	Kreditanstalt für Wiederaufbau
MAFWM	Ministry for Agriculture Forestry and Water Management
MDG	Millennium Development Goals
MIR	Municipal Improvement and Revival
PWMC	Public Water Management Company
RSD	Serbian Dinar (currency)
USD	United States Dollar (currency)
WFD	Water Framework Directive
WMP	Water Master Plan
WTP	willingness to pay