UNDP Regional Programme

Human Rights Based Approach (HRBA) to Improving Water Governance in Europe & CIS

WATER AND HUMAN RIGHTS SECTOR ASSESSMENT

SERBIA

July 2010

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Executive Summary

This water governance sector assessment provides a tool for understanding the present status of the water and human rights sectors in Serbia. It highlights areas of good progress and pinpoints where improvements should be made to achieve the 'right to water' for all citizens.

The assessment outlines the general outlook in achieving the Millennium Development Goals (MDGs), the status of water and wastewater services in the country, the human rights framework and illuminates five key issues to be acted upon. It further analyses relevant policy and strategy documents, transboundary cooperation, aid, the institutional and economic frameworks, and the capacity of the water sector and suggests key measures to improve the impact and effectiveness of Serbia's water sector.

Serbia is aiming for EU accession by 2014 and is endowed with natural and mineral resources with the potential to fuel significant economic growth in the country. However, at present, the environment, including its water resources, are in an unsatisfactory condition. Insufficient attention and investment in wastewater treatment in the past has resulted in highly polluted watercourses today, and their quality is deteriorating. There is an inadequate tariff structure for full cost-recovery, low water metering rate in most public water companies (PWCs) and a lack of financial incentives or penalty system to deter polluting and over-consuming behaviour: water service costs account for less than 1% of household annual budget on average. Insufficient public investment in water and sanitation infrastructure rehabilitation is a critical issue. The majority of infrastructure is in a deplorable condition, and requires urgent upgrading or replacement; current water losses are 30-50%. It is estimated that 75% of the total population (98% and 60% in urban and rural areas respectively) is connected to a public water system, but the figures differ greatly between sources. Development of sewerage services lags furthest behind, reaching only 46% of the total population (75% and 16% of the urban and rural populations respectively). Many of the largest towns in Serbia do not have a municipal wastewater treatment plant, and many that do exist have been abandoned.

The roles and responsibilities of various ministries operating in the water sector have not been clearly defined, and many have overlapping mandates. This is coupled with a plethora of challenges affecting water management and governance at the municipal level. Most concerning is the obvious mismatch between the obligations imposed on municipalities following the decentralisation process and the financial and human resource capacities at their disposal to meet these. There are also a host of management problems within PWCs. Capacity building, education and re-training of personnel at all levels needs to be prioritised for the sustainable development of Serbia's water sector. Institutional reforms of PWCs would also be beneficial to improve their efficiency, by inter alia, clarifying ownership and management responsibilities and introducing strategic planning.

Contamination of surface water, especially in rural areas where there is no quality control, is posing significant threats to human health. Water quality monitoring has shown quality differs greatly from region to region in Serbia, but an increase in the number of samples not meeting bacteriological, chemical and physical standards is a country-wide trend. Virtually no sanitary protection zones exist at water intakes and insufficient numbers of specialists and inspectors are trained in environmental health. The Polluter Pays Principle should be implemented to ensure adequate water pollution charges.

Serbia's national strategy and policy framework for the water sector is sufficient on paper, but extra efforts are needed to ensure all the policy and strategy components are implemented. Enhanced inter and intra-sectoral coordination would enable more efficient and effective implementation. With 92% of its surface waters originating from outside its borders, Serbia is a key player in the sustainable management of transboundary watercourses at multilateral and bilateral levels. Good progress has been made in stimulating transboundary cooperation with neighbouring countries to date and it is vital this is maintained. Multilateral and bilateral sources of financing for developments in the water sector have so far been limited, and mechanisms should be sought to strengthen external financial assistance, to lower reliance on domestic financial resources. Giving higher priority ranking to the water sector in national development strategies and international cooperation could be one method.

The overarching aim of UNDP's regional 'Human Rights Based Approach (HRBA) to Improving Water Governance Programme' is to contribute towards making access to an affordable water supply, providing sufficient, safe water for personal and domestic uses, located within, or in close proximity to the household, a reality for every individual in the country, regardless of their age, sex, ethnicity, race etc. At present this is furthest from being realised for the three most vulnerable and marginalised groups in the country - the estimated 86,000 refugees, 210,000 IDPs and over 200,000 Roma. These groups are predominantly located in the southern part of Central Serbia, and reside in collective centres where they endure very poor conditions, or in extremely poor and overcrowded settlements/slums/dumps with unregulated legal status and insufficient water and sanitation services, in terms of both quality and quantity. Women from these disadvantaged groups are in a particularly unfavourable position due to gender discrimination and from being a member of a marginalized group. This makes it more difficult for them to access key institutions and resources, which is adversely impacting their health and quality of life. These groups must be prioritised in concrete projects developed under the terms of the HRBA programme, and regional cooperation on improving their situation would no doubt prove beneficial.

Serbia's civil society lacks a good awareness of their water rights, the risks of using unsafe water and the redress mechanisms available to them should duty-bearers fail in their water service delivery obligations. Efforts are needed to empower rights-holders to claim their rights and become active subjects in their own development. A good institutional framework for protecting human rights is in place in the country; the Ombudsperson, Ministry for Human and Minority Rights and civil society organisations are particularly active, but the slow progress in implementing international human rights law shows there is room for improvement. National human rights legislation is comprehensive and well-harmonised with EU legislation. By contrast, advances in developing national environmental/water legislation have been made, but the law remains largely in a transitional stage with respect to contemporary standards and is not harmonised with EU standards. There is hope that the new Water Law (2010), intended to better harmonise national legislation with the EU Water Framework Directive, will improve this situation, but this will take time. Enforcement of domestic water and human rights legislation remains a weakness and should be the focus of greater attention, as written statutes are largely worthless until effectively implemented.

Progress has evidently been made in reducing the percentage of Serbia's population without appropriate access to safe drinking water and basic sanitation (national MDG7 target), which is promising. Achieving the 'right to water' for all will require greater time, energy, financial and human resources, courage and determination. It is a huge task but is certainly attainable if the recommendations in this assessment are proactively taken on board.

A1) MDG OUTLOOK AND GENERAL SITUATION IN SERBIA

The Republic of Serbia is part of the Balkan region in South East Europe, covering an area of 88,361km^2. It was formed following Serbia and Montenegro's split into two independent states in 2006. Two years later in February 2008, the UNMIK-administered province of Kosovo subsequently declared independence; a move recognised by the majority of EU countries and the United States of America, but not the Republic of Serbia or the United Nations. Today, Kosovo remains under an international protectorate. Administratively, Serbia is divided into 150 municipalities and 24 cities, which form the basic units of local self-government. Of the 150 municipalities, 83 are located in Central Serbia, 39 in the Autonomous Province of Vojvodina (21,506km^2) covering the northern third of the country, and 28 in Kosovo (10,887km^2). Whilst Vojvodina has its own assembly and executive council, Central Serbia has no regional government of its own.

As of January 2010, the Republic of Serbia (without Kosovo[1]) has an estimated population of 7,306,677 (Statistical Office of the Republic of Serbia). Approximately 58% live in urban areas and 42% in rural areas, with a 0.5% annual rate of urbanisation. The population is comprised predominantly of ethnic Serbs (83% population), with Hungarians (3.9%), Bosniaks (1.8%) and Romany (Gypsy) (1.4%) the main minority ethnic groups. The population growth rate is -0.469%. Serbia has the largest refugee and Internally Displaced Persons (IDP) population in Europe, with an estimated 86,351 refugees and 224,881 IDPs as of January 1 2010 according to UNHCR. Roma populations are predicted to total between 250,000 and 500,000, but pinpointing the exact figure is near impossible. Serbia is classified as an upper-middle income economy by the World Bank[2], and as an emerging and developing economy by the IMF. The Republic has a high Human Development Index of 0.821 (UNDP, 2009a) and GDP per capita has risen steadily from $2,100 in 2002 to $6,870 (2008)[3]. Endowed with a wealth of natural and mineral resources, and fertile and arable agricultural land, there is great potential for rapid economic growth in the country. The Government officially applied for EU membership on December 22nd 2009 and is aiming for EU accession in 2014.

Overall, the state of the environment is unsatisfactory today in Serbia, which applies equally to the state of water and water resources, as to air, biodiversity, forests and soil. Environmental degradation has been brought about by rapid industrial development post World War Two. The water sector has gone through various phases since then. Between 1950 -1980 significant efforts resulted in a largely sound water sector, but economic sanctions and conflict in the 1990s have prevented any further development of the sector. The current problems in the water sector can be attributed to insufficient understanding of the importance and role of water in human development, and the wide gap between financial demand and actual investment. 900million EUR is required for the operation, maintenance and development of the water sector, but existing sources of financing at all water management levels and in all segments yields only 250million EUR; approximately 3-4x less than what is needed. This has resulted in a considerable lack of coordination and organisation in the water sector. If the trend of the last 15 to 20 years continues, the adverse situation threatens to reach unacceptable proportions.

[1] Kosovo has approximately 1.8million inhabitants, the majority being Albanians.
[2] http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.XLS
[3] http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.XLS

MDG Outlook

Serbia signed the 2000 Millennium Declaration and in October 2004, the Government set up a multi-sectoral Task Force[4]. The MDG Task Force's activities were aimed at defining national development goals to be reached by 2015, in active cooperation with the NGO sector, professional associations, business and media, as well as preparing information for a campaign through which civil society's awareness of the MDGs would be increased. The MDG Task Force drafted a Review of the Implementation of the UN MDGs in the Republic of Serbia. Special groups have been established to focus on the identification of national MDGs and targets. These national MDGs were adopted by the Government of Serbia in 2006.

Three main objectives exist to ensure environmental sustainability (MDG 7) in the Republic of Serbia. The second is most relevant to water and sanitation in the country: '*Reduce the percentage of the population without appropriate access to safe drinking water, basic sanitation and organized communal waste collection'*. Progress in this regard is evident. In 2002, the percentage of the population with access to public waterworks was 69%, rising to 78.3% in 2008 (Statistical Office of the Republic of Serbia[5]). However, further improvements and developments are needed to rectify the great urban/rural disparity in public water network coverage, improve service quality, and minimise losses in the water supply system that currently stand at approximately 30% (Republic Development Bureau, 2009), due to the ageing infrastructure and years of inadequate maintenance. As is often the case, development of the sewerage system has lagged behind that of the water system in Serbia, and as a result access to the public sewerage systems has increased to a lesser extent, from 33% in 2002 to 35.03% in 2008 (Statistical Office of the Republic of Serbia). These figures mask a greater percentage increase in urban areas from 50% to 85% (UNDP, 2009b). Access to the public sewerage system in rural areas is significantly lower and unsatisfactory, with only 22% estimated to be connected in 2006 (Government of the Republic of Serbia, 2006).

Evidently, some progress towards achieving MDG 7 has been made in Serbia, but further significant improvements are needed to increase access to safe, affordable water supply and sanitation services before 2015, especially in rural areas. The government had set two specific targets to help achieve the water and sanitation related objectives of MDG7:

i) Increase the proportion of households with access to the public water supply network to 98% in urban areas and 65% in rural areas by 2015;

ii) Increase the proportion of households covered by the public sewage systems to 65% by 2014 and increase the proportion covered in big towns (population over 100,000) to 100% by 2015.

However, more recent reports[6] suggest these specific targets no longer exist.

A2) Water supply services in Serbia

A.2.1. Water Supply Coverage

Data on Serbian citizens' access to drinking water and sanitation are approximate and vary according to sources. According to the Directorate for Water (DW) of the Ministry of

[4] Composed of representatives of Government Ministries, the Statistical Office of the Republic of Serbia, the Standing Conference of Towns and Municipalities, the Poverty Reduction Strategy Implementation Team, the EU Integration Office, the Institute for Public Health and UN agencies present in the Republic of Serbia.

[5] http://webrzs.stat.gov.rs/axd/en/

[6] UNDP (2009b) – 'Progress of the Realization of Millennium Development Goals in the Republic of Serbia'.

Agriculture, Forestry and Water Management (MAFWM), the national average population covered by a public system is 75% (98% in urban areas and 60% for rural areas) and between 50% and 60% for access to a public sewerage system (less than 40% in rural areas). By contrast, according to WHO/UNICEF Joint Monitoring Programme data (2006) for Water Supply and Sanitation in Serbia and Montenegro, 97% of the population in urban areas has access to an improved water supply in the home as meaning sourced from a pipe, a public tap, borehole/tube well, protected well, protected spring or rainwater, and 53% in rural areas. However, these coverage figures are misleading. Households appear to have reported what they have, not what is properly functioning. Many of the piped water supply systems are operating poorly, if at all, particularly in rural areas.

Whatever the source of information, a considerable urban–rural disparity in coverage certainly exists. Approximately half of the country's population lives in urban areas and is supplied by the three largest (Belgrade, Novi Sad and Niš) or medium-sized water supply systems. In the Autonomous Province of Vojvodina there are 465 settlements of which 69 do not have piped water. People living in rural areas get their drinking water from three different sources: i) official piped water systems owned and operated by the municipality; ii) private piped systems built and operated by the communities themselves, and iii) private wells (tube well/borehole with pump, dug well).

Data on rural public water supply systems are very scarce, but it is estimated that there are about 5,000 that are not registered and are not water quality controlled. Water supply systems cover 300,000 private wells. Only 10% of the exploited water sources are protected with sanitary protection zones around intakes. Water supply and wastewater infrastructure design is based on domestic standards that set 250 l/capita/day as design capacity; a high figure when compared to EU standards (180–200 l/capita/day). Water consumption is higher in Serbia than in other European countries. The average amount of water injected into the networks is 370 l/capita/day (500 l/capita/day in Belgrade) (UNECE, 2007). The General Urban Plan for Belgrade mentions 900 l/capita/day, an extreme figure due to losses in the water supply systems, estimated at 30 to 50%. Consumption in rural areas and in municipalities with fewer than 50,000 inhabitants is significantly below the national average.

A.2.2. Sources and Treatment of Drinking Water Supply

Approximately only 8% of all available surface waters in the Republic of Serbia originate within its borders. The remaining 92% are transboundary waters entering Serbia through the Danube, Sava, Tisa, Drina and other rivers. Raw water for drinking purposes is sourced from groundwater (59%), surface water (24%) and springs (17%). According to figures for 2009 of the National Statistical Office, water abstraction has decreased by 3% over the last three years. However, groundwater extraction exceeds the natural capacity of replenishment in a number of aquifers, leading to groundwater depletion. This is an especially serious problem in Vojvodina where many shallower aquifers were over-exploited and now about 57% of water is being extracted from deeper aquifers, many of which have a naturally high level of arsenic.

Water flow is seasonally variable, leading to shortages throughout Serbia, especially during the summer months, and particularly in southern Serbia. Water quantity problems necessitated the construction of reservoirs as part of a regional water supply strategy. All public regional and municipal water supply systems have water treatment plants. However, 90% of municipalities have not yet implemented protection measures (i.e. sanitary protection zones) for areas used for water abstraction (UNECE, 2007).

A.2.3. Condition of the Distribution Network

759 public water distribution systems in Serbia cover about 1,000 settlements (Directorate for Water, 2008). Data on water storage and distribution network are presented below:

Location	Water reservoirs		Total length water network Km	Water mains km length	Distribution network Km length	Number of water connections	Number of standpipes	No of public fountains linked to public water supply
	Number	Volume Cubic meter						
Rep of Serbia	**947**	**649,294**	**28,877**	**3,577**	**25,300**	**1,3680,76**	**50,776**	**2,504**
Central Serbia	**599**	**541,126**	**18,784**	**2,519**	**16,265**	**864,401**	**33,530**	**793**
Belgrade	**46**	**247,125**	**4,513**	**338**	**4,175**	**184,466**	**15,922**	**80**

Table 1: Water reservoirs and water network, 2005

Source: Statistical Office of the Republic of Serbia

Water losses are a big problem, amounting to approximately 30 to 50% of water distributed in the networks (Table 2). Such losses can be attributed to inefficient operational management, lack of timely repairs, and of insufficient investment over the last twenty years.

WATER DISTRIBUTION

thous. m^3

	Water quantities consumed by				Total losses of water	Number of households connected on public water supply
	total	Households	Non-economic sector	Other users		
2007						
Republic of Serbia	507 103	355 113	...	151 990	201 393	1 957 993
The central Serbia	384 625	268 986	...	115 639	165 290	1 321 601
Vojvodina	122 478	86 127	...	36 351	36 103	636 392
2008						
Republic of Serbia	475 875	348 052	74 229	53 594	217 384	1 996 350
The central Serbia	356 733	255 667	62 945	38 121	179 410	1 341 187
Vojvodina	119 142	92 385	11 284	15 473	37 974	655 163
2009						
Republic of Serbia	464 660	339 005	68 593	57 062	220 478	2 033 045
The central Serbia	349 219	253 468	57 480	38 271	185 127	1 389 528
Vojvodina	115 441	85 537	11 113	18 791	35 351	643 517

Table 2: Water Distribution and Losses in Serbia 2007 – 2009.

Source: Statistical Office of the Republic of Serbia

A.2.4. Affordability and Standards of Water Supply Services

The price of drinking water and wastewater is very low at 0.3-0.4 € per cubic meter, which amounts to less than 1% of the average household budget. Payments for sewerage collection

amount to only 0.1% of household budgets (Table 3). Such low prices do not allow for a metered volumetric tariff nor cover the full cost of operation and maintenance (estimated at 1.5 € per cubic meter). Disconnection due to non-payment of bills is allowed by law but it is almost never applied in the case of households. Cross-financing between domestic and other sectors and subsidising from the municipality are commonplace.

Per cent of total resources

Item	Urban areas	Rural areas	National average
Waste collection	0.4	0.1	0.3
Sewerage collection	**0.1**	**--**	**0.1**
Water supply	**0.8**	**0.6**	**0.8**
Electricity	6.4	6.7	6.5
Gas	0.6	0.4	0.5
Firewood	2.0	4.3	2.8
Coal	0.7	1.5	1.0
Central heating /hot water	1.2	--	0.8

Table 3: Household expenditures on domestic waste collection and disposal, water services and energy products in 2004 (% of household expenditures)
Source: Statistical Office of the Republic of Serbia, Household Budget Survey 2004

Water supply and sewage services at the local level are the responsibility of municipal public water services institutionalized in Public Water Companies (PWCs). Sometimes these services are combined with municipal waste collection, municipal heating and disposal services. Although these services are formally independent, their actual power in tariff setting is very limited. Tariffs for water and sanitation services are proposed yearly by PWCs to the municipal assembly for approval. Since 2004, the Ministry of Finance has imposed a ceiling on tariff increases, and PWCs cannot exceed the programmed inflation rate. Tariff setting has therefore often been dominated by political and social considerations rather than on PWC operation and maintenance needs and incentives for change in the behaviour of households and enterprises; revenue losses amounted to some 120 M € in 2004. Tariffs and fines for wastewater discharge above the authorized limits are very low compared to the costs of treatment facilities, and sanctions for non compliance are not implemented. Thus there is no adequate incentive for the industrial and agricultural sector to comply with the law.

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.

No significant efforts have been made to reform the public utilities into more efficient organisations that work according to sound economic principles. PWCs are burdened with obsolete infrastructure, leading to water and energy losses that increase their operational costs and decrease net income. Further inefficiencies stem from low tariffs, water losses (30%) and low bill collection rates (60% in 2008), overstaffing, and the absence of sound and customer oriented organisation and management inherited from the past. Without appropriate legislation, plans, strategies and support from the national level, the municipal PWCs are unable to improve their own status, organisation and efficiency, even where there is local-level political will to do so. All these factors do not allow the utilities to invest in the repair,

let alone expansion, of their infrastructure. Figure 1 shows the "vicious" cycle of inefficient PWCs.

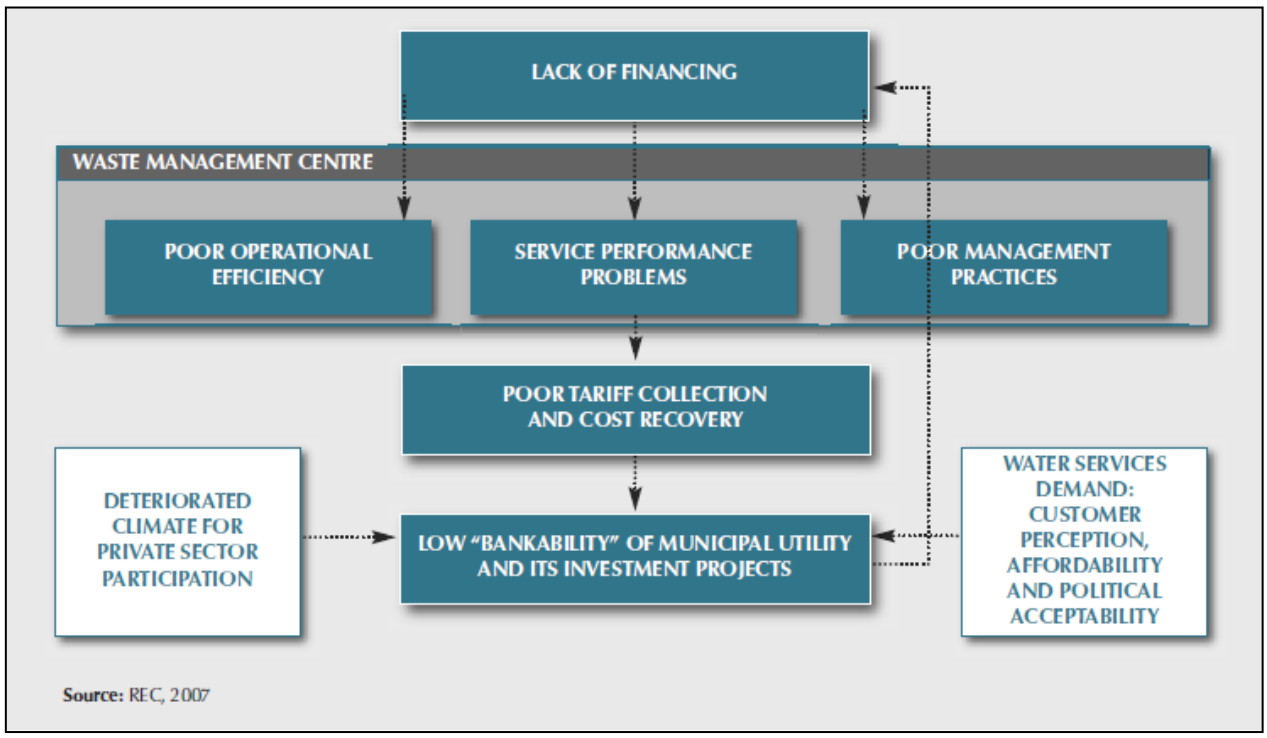

Figure 1: The vicious cycle of PWC inefficiencies
Source: Regional Environmental Centre (2007)

Over the last decade, there have been increases in water supply prices and sewerage charges in many municipalities, which have improved cost recovery and revenues from fines have increased as well. Collection rates are also reported to have improved, but actual statistics are not available. In 2008, approximately 70% of abstracted water was actually invoiced and about the same proportion (60%) of water bills were actually paid. 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. In 2009, water supply costs accounted for less than 1% of household expenditures on average.

A.2.5. The State of Water Quality Monitoring

Domestic drinking water standards are in compliance with the World Health Organization (WHO) guidelines and the EU Drinking Water Directive. Responsibility for hygienic control of the drinking water quality in Serbia rests under the local Institutes for Public Health. Quality control is conducted in compliance with the *Regulation on hygienic regularity of quality of drinking water* (OG FRY No. 42/1998).

The quality of surface and underground water, aquifers and reservoirs is monitored by the Hydrometeorological Service (HMS) based on an annual programme adopted by the Government. In 2005, the monitoring system on Serbian territory included 187 surface water hydrological stations. Surface water quality is monitored regularly, with a sampling frequency of 12–24 times a year and analysis of 36–63 water quality parameters. The quality of underground water is monitored at 68 stations, while sediments are tested according to 33 profiles. The Institute of Public Health of Belgrade monitors the surface water quality of the

Danube, Sava, Kolubara and other rivers in the Belgrade area, with more than 170 samples taken yearly.

The DW, through the Srbijavode and Vode Vojvodine water enterprises, is in charge of monitoring wastewater discharge. A total of 34 inspectors carry out about 4,000 inspections per year. Only 30% of such inspections are planned in advance and performed each year between February and April; the remainder are carried out in response to reports by citizens. When illegal discharge is found, the procedure for prosecuting the polluter is long, and is successful in only about 10% of cases. The costs of identifying the source of pollution are often higher than the fine imposed on the polluter.

The 1968 *Decree on Classification of Waters* (OG RS No. 5/1968) divides surface water into four quality classes. Class I refers to very clean water that requires only disinfection in order to be used for water supply and is suitable for recreational activities. Class II is for slightly polluted water requiring adequate treatment in order to be used for water supply. Such water is suitable for recreational activities but not for trout farming. It may be used as irrigation water if important standards are met. Class III water is polluted and requires adequate treatment in order to be used for industrial supply (except for the food and textile industries); it is not suitable for recreational activities. Class IV water is highly polluted.

Watercourses in Serbia are widely polluted and their quality is deteriorating. The most polluted rivers include the Stari and Plovni Begej, Topolica, Veliki Lug, Lugomir, Crni Timok and Bor, as well as the Vrbas–Bezdan Canal. According to findings of the HMS in 2005, the water parameters for 23% of 65 monitored river profiles fell into Class II, 70% into Class III and 6% into Class IV. In 2004, the Danube, Tisa and Tamiš rivers fell from Class II/III to Class III/IV.

A survey conducted between 2001 and 2005 by the Public Health Institute of the Republic of Serbia monitored 150 public water supply systems providing drinking water to about 70% of the Serbian population and revealed how many water supply systems delivered water that did not meet bacteriological, physical and chemical standards. Water quality differs significantly from region to region. Monitoring has shown the presence of ammonia, nitrates, sulphides, iron and mineral oils in the Tisa River Basin; evaporable phenols and manganese in wells in the area of Backa; and in some cases, suspended solids as in the South Morava Basin. Throughout Serbia, the most problematic physicochemical water quality parameters are turbidity, iron, manganese, nitrates and arsenic

In Central Serbia the main problem is bacteriological contamination, with more than 40% of samples not meeting standards. The Autonomous Province of Vojvodina has severe problems with both physicochemical and bacteriological water standards; 67% of water samples do not meet the requirements. Reserves of underground water in the Autonomous Province of Vojvodina are polluted with heavy metals. School children appear to be particularly at risk, since 90 schools in the Autonomous Province of Vojvodina have no water supply facilities, and in 508 schools the bacteriological quality of water was found to be unsatisfactory (WHO, 2009).

The drinking water quality of Belgrade's public water systems (serving 1.6 million inhabitants) differs significantly between the city and its suburbs; with poorer water quality generally evident in the latter. For Belgrade city, the results of laboratory analyses of drinking water in 2005 show that 1.5% of the samples did not meet the requirements with respect to

physical and chemical characteristics, and 6.4% of the samples did not meet bacteriological requirements. In the suburbs, 29% of the samples did not meet physical and chemical requirements and 7.7% did not meet bacteriological requirements. Monitoring of water quality in schools located in city suburbs, which have their own water supply systems, shows that 57.7% of samples did not meet requirements with respect to physical and chemical characteristics and 62.8% of samples did not meet biological requirements. The quality of drinking water delivered by Belgrade's central water supply system from 2001 through 2005 shows an increase in the percentage of samples failing to meet quality standards.

No monitoring is performed for rural water supply systems, which serve about 30% of the population. Official data are not available. Inspectors perform monitoring when necessary and on regular intervals, but their activities are hampered by the lack of legally responsible counterparts.

A.3.Wastewater and Sewerage Services in Serbia

The development of the sewerage system lags significantly behind the development of the water supply system in Serbia. About 46% of the population is connected to sewerage systems (Government of the Republic of Serbia, 2008). 75% of the urban population is connected, 16% of the rural population, and an estimated 13% of all municipal wastewater is treated (Figure 2).

Figure 2: Purified and total wastewaters 2007-2009 (million m^3).
Source: Statistical Office of the Republic of Serbia

Waste water treatment plants for municipal waste waters with a capacity of about 1,000,000 people have been built in 28 settlements, of which only five were operating in 2006. Some of the largest towns in the country do not have a municipal wastewater treatment plant, whilst some of the existing wastewater treatment plants are abandoned; many only provide primary (mechanical) treatment and are not continually operated. Only 5.3% of communal wastewater is discharged into recipients with adequate treatment. Non-point-source pollution contributes to more than 50% of total water pollution: these sources produce over 80% of total nitrogen, 50% of total phosphorus, and 90% of faecal and total coliform bacteria.

Almost all schools and child-care institutions have access to a continuous sanitation infrastructure with separate facilities for boys and girls (WHO and UNICEF, 2006). Almost 90% of the population has flush toilets linked either to a sewage system or a septic tank. However, there are important urban–rural differences. While approximately (84%) of the urban population uses a flush toilet linked to a sewage system, 64% of the rural population uses a flush toilet that empties into a septic tank and 19% uses traditional pit latrines. This difference is even more pronounced in the Roma population, the most vulnerable and marginalised group in Serbia. About 50% of the Roma settlements use the traditional pit latrine, a third are connected to the piped sewerage system (mainly those in peri-urban areas), and 5% live without toilet facilities (WHO, 2009).

Ten years ago wastewater treatment facilities of large companies and industries had largely fallen into disrepair and were not functioning to full capacity. Ever since, projects have been implemented to develop new plants and renovate existing facilities. Today, industries within urban areas generally use the municipal wastewater systems to discharge their wastewater, whilst those outside urban areas usually discharge directly into the nearest water course, with minimal or no treatment. Most industrial and mining wastewater is discharged into the Sava River and its tributaries. The main point sources of organic discharge in Serbia are the estimated 130 pig farms with 1.2 million animals (UNEP, 2004). Table 4 provides information on wastewater collection in Serbia between 2007-2009.

Waste water collection by public sewerage system

thous. m^3

	Waste water				Purified waste water			
	Total waste water quantities[1)]	**From households**	**From industry and public utilities**	**From other**	**total**	**Primary treatment (mechanical-chemical treatment)**	**Secondary treatment (biological treatment)**	**Tertiary treatment mechanical-chemical-biological treatment)**
Waste water collection by public sewerage system, 2007								
Republic of Serbia	366 600	248 375	73 130	45 095	54 938	7 371	46 172	1 395
The central Serbia	294 365	204 266	56 069	34 030	33 521	6 706	25 420	1 395
Vojvodina	72 235	44 109	17 061	11 065	21 417	665	20 752	-
Waste water collection by public sewerage system, 2008								
Republic of Serbia	349 176	224 803	75 599	48 774	48 126	4 065	42 491	1 570
The central Serbia	275 790	192 199	50 051	33 540	26 169	3 097	21 502	1 570
Vojvodina	73 386	32 604	25 548	15 234	21 957	968	20 989	-
Waste water collection by public sewerage system, 2009								
Republic of Serbia	208 158	142 077	31 536	34 545	56 037	5 151	38 801	12 085
The central Serbia	135 984	95 626	20 556	19 802	34 521	4 381	29 448	692
Vojvodina	72 174	46 451	10 980	14 743	21 516	770	9 353	11 393

Table 4: Wastewater collection in Serbia 2007-2009.
Source: Statistical Office of the Republic of Serbia.

Insufficient attention and investment in wastewater treatment in the past has contributed to the deterioration of the quality of water courses and recipients (Figure 3). Uncontrolled discharge of untreated waste water into local streams and ditches or inadequate septic tanks also poses a threat to ground water resources. Water quality protection measures are seldom used. The perpetrators of accidental discharges are difficult to identify and the fines are insignificant. Fortunately, a series of measures, including sanctions, against polluters have been recently introduced.

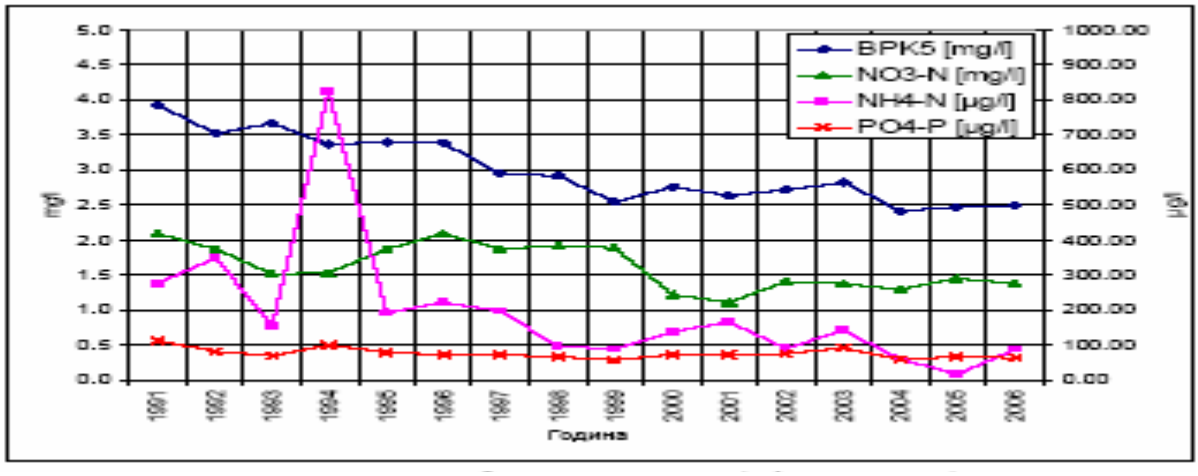

Figure 3: Trends of water quality in the Republic of Serbia 1991-2006
Source: Environment Protection Agency (2007)

A4) The Situation regarding the 'Right to Water'

The Human Rights Based Approach (HRBA) to development identifies rights-holders and their entitlements, and duty-bearers and their obligations and analyses the relationship between them. In Serbia's water sector, duty-bearers comprise the public water companies and government at all levels. Rights-holders comprise every individual in the country whatever their gender, race, age and ethnicity etc; each person has a right to reliable access to clean and affordable potable water. Importantly on July 28th 2010, the UN General Assembly recognised access to safe drinking water and sanitation is a human right the world over[7]. The 'right to water' does not mean free water, or allow for unlimited use of water, nor entitle everyone to a household connection or to water resources in other countries. Rather, a 'right to water' means an affordable water supply providing sufficient, safe water for personal and domestic uses, located within, or in close proximity to the household.

In Serbia, a lack of investment in the water sector and deterioration in water management over the last 15 years or so is impeding duty-bearers from satisfactorily fulfilling their water service delivery obligations to rights-holders. The situation is worse for individuals belonging to marginalised and vulnerable social groups, namely refugees, IDPs and Roma, who should be the target group of any project developed under the terms of UNDP's HRBA regional programme.

A.4.1. 100,000s of IDPs, Refugees and Roma without access to safe water and sanitation

In Serbia, IDPs, refugees and Roma, mainly located in the southern part of Central Serbia, are the most vulnerable groups regarding access to drinking water and sanitation. These groups

[7] http://www.un.org/apps/news/story.asp?NewsID=35456&Cr=sanitation&Cr1

overwhelmingly reside in collective centres where they endure very poor conditions, or in extremely poor and overcrowded settlements/slums/dumps with unregulated legal status and insufficient water and sanitation services, in terms of both quality and quantity. The Government, with support from UNHCR, intends to close the collective centres by the end of 2013 and relocate inhabitants in appropriate housing; yet this is becoming increasingly difficult due to donor fatigue and the fact that those left to move are the most vulnerable (elderly/disabled). Approximately 10 centres are being shut every year, with 40 remaining to be closed. Schoolchildren are an additional vulnerable group; in the Autonomous Province of Vojvodina 90 schools have no water supply facilities and in 508, water quality is unsatisfactory (WHO, 2009).

There are approximately 205,000 (UNHCR) – 210,000 (Government of Serbia) IDPs in Serbia, not taking into account the estimated 20,000 Roma that have never registered as IDPs due to a lack of documentation. More than 90% of IDPs are from Kosovo, with Serbs forming the predominant ethnic group, followed by members of RAE communities[8]. Due to the slow pace of returns, the overall number of IDPs is decreasing very slowly (see Figure 4). IDPs continue to face many obstacles in exercising their basic social rights, including their right to water. Without an official place of residence with a building licence, access to clean, safe water cannot be granted.

Year	No. of IDPs
1999	176,014
2000	197,500
2001	201,700
2002	206,000
2003	205,000
2004	208,135
2005	207,448
2006	206,859
2007	206,071
2008	205,842
Aug 2009	205,835

Figure 4: IDPs from Kosovo in Serbia (excluding Kosovo) 1999-2009. *Source: Internal Displacement Monitoring Centre*

According to UNHCR, 86,000 refugees currently reside in Serbia, among whom poverty and unemployment is particularly acute. Access to sufficient, affordable, potable water is also not a reality for the majority. There have been very limited improvements in the housing situation for refugees, although the number living in collective centres has decreased, albeit slowly. The national strategy on refugees and the law regulating this issue still need to be revised.

The Roma population, especially Roma women and children, is unarguably the most disadvantaged and marginalised national minority, facing a unique set of obstacles that continue to hamper their development, such as a lack of access to basic amenities, including safe water and sanitation. Such problems are related to the deep-rooted and systemic discrimination Roma populations face. The number of Roma is a subject of controversy. Estimations vary from 200,000/250,000 (Ministry of Health) to 450,000/500,000, dispersed in 600 Roma settlements concentrated largely in southern and central Serbia, with 150 such settlements in Belgrade alone. The primary reasons for the lack of certainty over numbers are a lack of documentation, unregistered housing, the fact that many Roma identify themselves as Serbs instead of Roma, and a general mistrust between the authorities and the Roma. This very dispute over the exact number of Roma, and the significant deviation between the official and widely accepted numbers, serves as a good example of the extent of marginalization and alienation of the Roma population in Serbia (United Nations in Serbia, 2008).

[8] Internal Displacement Monitoring Centre data (http://www.internal-displacement.org/idmc/website/countries.nsf/%28httpEnvelopes%29/0FDDBEFDFE2EE97EC1257648002E0BB8?OpenDocument#40.2.1)

The Government of Serbia has gradually been putting in place a normative and institutional framework to improve the dire socio-economic status of Roma in the country. During the Serbian Presidency[9] of the Decade of Roma Inclusion (2005-2015), Serbia adopted the National Strategy for the Integration and Empowerment of Roma, and an action plan to implement the strategy. Moreover, the League for the Roma Decade, an alliance of 60 Roma and non-Roma NGOs, has become a respected partner to the state and local institutions (EC, 2009). For the first time in their long history in the region, the Roma have been granted national minority status, giving them an opportunity to realize their rights. Additionally, efforts to raise awareness about the new Anti-Discrimination Law have just started. Whilst these changes have brought about some improvements, the Roma population continues to endure very difficult living conditions and frequent discrimination, particularly regarding access to education and basic amenities, adequate housing, health care and employment (EC, 2009). Moreover, Roma populations are largely not aware of legal provisions protecting their rights (including the right to water), and/or seldom use them.

Overall, the position of Roma communities remains uncertain given there is no institution charged with the adoption and implementation of the Strategy of Roma Integration or action plans from the Roma Decade. A more systematic and coordinated approach to improve the socio-economic status of Roma in Serbia, reduce their discrimination and progressively realise their right to water is certainly needed. Regional cooperation in solving the problems of IDPs, refugees and Roma would also be beneficial.

A.4.2. A Lack of Civil Society Knowledge and Awareness

In Serbia, there is a lack of knowledge and awareness amongst the civil society regarding their water rights, of the risks of drinking and using unsafe water and of the redress mechanisms available to them if and when duty-bearers fail in their water service delivery obligations. This is most true for the poor and uneducated vulnerable and marginalised groups in rural areas (IDPs, refugees, Roma), who have the least means or courage to claim their right to water and hold duty-bearers to account. From a HRBA perspective, unless these groups can be empowered to become active subjects in their own development and speak out for their right to water, improving their access to reliable, safe water and sanitation will continue to be a huge challenge. Awareness raising campaigns will no doubt help to improve the knowledge and awareness of these remote and vulnerable groups, but will need to be complemented with additional, sustainable interventions over a long period.

A.4.3. Fairly strong Human Rights Protection Institutions

- **Ombudsperson**

With the enactment of the Law on the Protection of Citizens in 2005, Serbia joined a large family of states that have an Ombudsperson institution. At both state and provincial levels, the Ombudspersons offices are very active in their primary role to protect citizens from malfunctioning administration, issuing a large number of opinions and recommendations, visiting relevant institutions and proposing amendments to legislation. Public awareness of the existence and responsibilities of the Ombudsman has also increased as a result of numerous organised awareness-raising campaigns. However, citizen complaints regarding a lack of access to sufficient, affordable, potable water have been few and far between. The 2009 Report of the Protector of Citizens mentions only one case where a lack of running water was a problem in the disabled adults' residence facility in Doljevac near Niš. There have also been a few complaints from IDPs about cuts of services including drinking water.

[9] Serbian presidency began in June 2008.

As aforementioned, the Roma are most discriminated against in terms of access to safe water and sanitation. The most publicized relocation of Roma from Gazella and Topola settlements to new settlements that lacked access to public services necessitated intervention by the Ombudsperson, who visited the new settlements to make sure the Roma had access to all public services including drinking water. The ombudsperson also mediated with Serbian authorities to make sure that all these refugees and IDPs relocated from collective centres had access to public services in their new settlements. Additionally, with the high number of complaints related to land and housing rights and access to public services from vulnerable groups and their defenders, the Ombudsperson has made recommendations and proposed the adoption of procedures to legalize land property for vulnerable groups.

To further improve the capacity and effectiveness of the Ombudsperson, the state needs to provide all the resources necessary for the offices to carry out their mandates, and follow-up on the Ombudsperson's recommendations (EC, 2009).

- **Ministry for Human and Minority Rights**

Following the formation of a new government in July 2008, the former government human rights agency was replaced by a Ministry for Human and Minority Rights. The ministry has been active in raising awareness within the administration about international human rights obligations, and has signed a memorandum of cooperation with more than 150 civil society organisations (CSOs) active in the field of human rights, improving CSOs involvement in policy and decision-making. The International Roma Day and similar occasions have been used by the Ministry to promote tolerance and respect for human rights and raise awareness among the Serbian population. The Ministry also undertakes visits to Roma settlements regularly to make sure that Roma populations have access to safe water and are living in hygienic conditions.

- **Independent Commissioner for the Protection of Equality**

The Law on Prohibition of Discrimination adopted in March 2009 created for the appointment of the Independent Commissioner for the Protection of Equality, which became operational from early 2010. The commissioner deals with all cases of discrimination, except those already processed in the court. While it is still early days to gauge the impact of the commissioner, it should be noted that vulnerable groups such as Roma continue to be subject to discrimination and are given little support. Greater efforts are needed to ensure legislation, specifically the new Anti-Discrimination Law (2009), are properly enforced.

- **Civil Society Organisations (CSOs)**

Serbia has a vibrant and active civil society community with a large number of registered NGOs emerging from the anti-war movement in the 1990s. Whilst there is no NGO working exclusively on drinking water and sanitation in Serbia, various environmental NGOs work in these fields amongst others. For example, the Environmental Movement of Vrbas NGO has publicly protested against the continued pollution of the Grand Backa Canal by industries and the inaction of local authorities, and has collaborated with the MESP to heighten the Government's attention on this alarming situation. With the development of a citizens' network, the NGO is about to establish a civil monitoring system of water quality and early warning system for the Backa and Novi Sad canals. The NGO has also prepared a major plan and programme to restore the surface water and banks of the canal for recreation, livelihoods and tourism, and initiated a public awareness campaign on safe potable water. Some

environmental NGOs are also part of a Balkan network aiming to improve transboundary water and other environmental resources management.

The new Law on Associations adopted in July 2009 clarified the legal status of NGOs, which has brought with it some improvements in Serbian administration cooperation with civil society. However, cooperation still remains largely ad hoc and selective, with many CSOs complaining the government does not see them as partners, but rather agitators or extremists. There was virtually no consultation with Serbian citizens and NGOs on the drafting of the new Water Law. This might create problems in its implementation as Serbian citizens are unlikely to change their behaviour (with regards to conservation, price increases) in the absence of awareness raising campaigns.

Overall, a good institutional framework for the observance of human rights is in place in Serbia but there is still room for improvement. Insufficient progress has been made in implementing international human rights law indicating that institutional structures for the implementation of human and minority rights, including the right to water, need further reinforcement.

A.4.4. Legislative Framework

Serbia has signed or ratified the majority of international conventions and regional instruments relevant to a HRBA to improving water governance, as follows, which creates an enabling environment in which to implement a project under the terms of the programme:

- **Universal Declaration of Human Rights (1948);**
- **International Covenant on Economic, Social and Cultural Rights** (succeeded 12 March 2001) – the right to water is implicit within the right to an adequate standard of living and inextricably related to the right to the highest attainable standard of health outlined in the ICESCR. As a party to the ICESCR the Government of Serbia has an obligation to "respect, protect and fulfil" economic, social and cultural rights of its people, without discrimination.
- **European Convention for the Protection of Human Rights and Fundamental Freedoms and its Protocols (1970)** (ratified 3 March 2004);
- **International Covenant on Civil and Political Rights and its Protocols (1966)** (succeeded 12 March 2001)**;**
- **Convention on the Elimination of All Forms of Racial Discrimination (1962)** (succeeded 12 March 2001)**;**
- **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979)** (succeeded 12 March 2001)**;**
- **Convention on the Rights of the Child (1989)** (succeeded 12 March 2001)**;**
- **Convention against Torture and Other Cruel, Inhumane or Degrading Treatment or Punishment (1984)** (succeeded 12 March 2001)**;**
- **Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)** (acceded 31 July 2009)**;**
- **Convention on Rights of Persons with Disabilities** (signed 2007)**;**
- **Council of Europe Convention for the Protection of Human Rights and Fundamental Freedoms** (ratified 3 March 2004)**;**
- **Council of Europe Framework Convention for the Protection of National Minorities (1995)** (ratified 11 May 2001)**.**

Serbia has not signed or ratified the following conventions related to transboundary water:

- **Convention on the Law of Non-Navigational Uses of International Watercourses (1997);**
- **UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);**
- **UNECE Protocol on Water and Health (1992);** however representatives present at the 'Workshop on Reporting' under the Protocol in February 2010 indicated the relevant ministries were in the process of signing the Protocol and are aiming for ratification in the near future.

The current Constitution of Serbia, approved by a constitutional referendum in October 2006, replaces the previous constitution of 1990. Whilst it fails to explicitly recognise the 'right to water', several articles do implicitly recognise the right;

- Article 18 – Direct Implementation of Guaranteed Rights: provides "human and minority rights guaranteed by the Constitution shall be implemented directly. The Constitution shall guarantee, and as such, directly implement human and minority rights guaranteed by the generally accepted rules of international law, ratified international treaties and laws". As such, the Constitution guarantees the aforementioned signed/ratified international conventions supersede national legislation.
- Article 24 – Right to Life: provides that "human life is inviolable"; should someone restrict the access to safe, potable water for any human being it would de facto be endangering and violating the right to life.
- Article 74 – Healthy Environment: provides that "everyone shall have the right to a healthy environment and the right to timely and full information about the state of the environment...Everyone shall be obliged to preserve and improve the environment" (water resources included).
- Article 76 – Prohibition of Discrimination against National Minorities: provides that "persons belonging to national minorities shall be guaranteed equality before the law and equal legal protection. Any discrimination on the grounds of affiliation to a national minority shall be prohibited." This guarantees the international human rights principle of non-discrimination and equality on which, inter alia, the HRBA is based.

Since 2002, Serbia has made great progress in developing environmental, and specifically water-related, legislation. The most important laws governing the water sector in Serbia are the Law on Water (2010), which supersedes the Law on Waters (1991); the Law on Environmental Protection (2004, 2009) – Article 23 provides for protection of water resources; the Law on Strategic Environmental Assessment (2004); the Law on Environmental Impact Assessment (2004, 2009); the Law on Water Regime; Law on Communal Works and the Law on Public Utilities, which addresses treatment and disposal of stormwater and wastewater. Whilst the national environmental/water-related legal framework has improved considerably, overall the legislation remains in a transitional stage with respect to contemporary standards. Fines and charges have been introduced according to legal provisions, but these are not high enough to act as deterrents. This is exacerbating the difficulties in promoting investments in the economy, and the water sector more specifically (Government of the Republic of Serbia, 2008). Neither is the legislation fully harmonised with EU legislation; environment and water administrations seem unable to cope with EU concepts and tasks, and continue to need overseas assistance (WHO, 2009).

However, the new Law on Water (2010) is intended to better harmonise national water legislation with the EU Water Framework Directive (EU WFD). Created by the DW of the MAFWM, it was adopted on May 5th 2010, albeit without public consultation or information, having been highlighted as a priority in the National Sustainable Development Strategy (2008). Most of the contents of the EU WFD have been transposed into the new Law on Water (2010), and the Law appears comprehensive on paper, covering, inter alia, water regimes, water management areas and responsibilities, introducing new instruments for financing the water sector (including appropriate tariffs), whilst also defining water management responsibilities and the limitations of duty-bearers and rights-holders rights. However, it does not include the combined approach for point and diffuse sources of pollution of the EU WFD. Transposition of the EU Directives on Nitrates and Urban Wastewater would facilitate implementation of the combined approach. Moreover, implementation of the New Law will require time, adjustments, a set of bylaws and substantial financial means to comply with the EU WFD.

In contrast to water-related legislation, the legislative framework for the protection of human and minority rights *is* harmonised with the practice of the EU and Council of Europe; the only exception is the Law on Responsibility for Violation of Human Rights in the Republic of Serbia ("Official Gazette RS" Nr. 58/03). Indeed, the period since the democratic changes in 2000 has been characterised by legislative changes that have enhanced the protection of human rights. Minority rights are guaranteed by positive laws and are institutionally established through the National Councils of Minority and Ethnic Communities. For example, the new Law on Anti-Discrimination, adopted in March 2009, marks a great step forward in the protection of human rights. However, the situation is not perfect. Progress still needs to be made in the implementation of legislation in Serbia and problems remain in implementing the rights to free access to public information, despite the fact that the Law on Public Access to Information of Public Interest ("Official Gazette RS" Nr. 120/04 and 54/07) has been adopted (Government of the Republic of Serbia, 2008).

Overall, the legal and institutional framework for the observance of human rights is in place in Serbia and some progress has been made in improving observance of international human rights law. The new Ministry for Human and Minority Rights is playing an important role in promoting such rights, but further efforts are needed to increase understanding of relevant international standards and build institutional capacity further in this area (EC, 2009). Moreover, enforcement of water-related legislation remains weak, largely the result of a weak monitoring system, the lack of certain environmental standards and the generally low awareness of and compliance with laws. Law enforcement needs to be improved.

A5) Gender and Access to Water and Sanitation

Women from marginalized groups (Roma, refugees, IDPs, women with disabilities) have an especially unfavourable social position. Their discrimination is double, resulting simultaneously from their gender and from being a member of a marginalized group making it more difficult for them to access key institutions and resources, including safe, potable water and sanitation. Women and children from marginalised groups have the lowest access rates to safe potable water and sanitation, which has attended negative impacts on their health and quality of life. The National Poverty Reduction Strategy (2003) and the National Sustainable Development Strategy (NSDS) (2008) both emphasise the importance of improving environmental health affecting women and children of vulnerable groups. Doing so is considered one of the biggest challenges to implementing the NSDS.

A National Strategy for the Improvement of the Position of Women and the Advancement of Gender Equality was adopted in February 2009, but no specific gender equality law has been adopted to date. Institutionally, at the national level the Gender Equality Directorate within the Ministry for Labour and Social Policy (since 2007), a special Deputy Ombudsman for Gender Equality (since 2008), and a Parliamentary Committee for Gender Equality exist to promote gender equality. However, the mandate of these institutions is relatively weak and their financial resources scarce. Comparable structures exist within the Autonomous Province of Vojvodina (the Provincial Secretariat for Labour, Employment and Gender Equality, the Deputy Ombudsman, and a Parliamentary Committee); some of which have grown in strength and influence since their establishment between 2002 and 2004. At the local level, more than 70 gender focal points or similar mechanisms exist within municipalities, but they are not mandated or regulated by law. To increase the chances of achieving the 'right to water' for women of marginalised and vulnerable groups, the legislative and institutional framework for promoting gender equality and protecting women's rights needs improving.

A6) Main Issues To Be Addressed

A.6.1. Financial Constraints

Over the last 15 years, the municipal water supply and sanitation sector has suffered the following constraints and weaknesses:

- Inadequate tariff structure well below the full cost recovery of operations and maintenance;
- Huge technical losses, low water metering rate in most PWCs, insufficient billing, low collection rate of water and wastewater bills;
- Lack of financial incentives and a penalty system to change the polluting and over-consuming behaviour of households and industries and to encourage PWCs to reduce water losses;
- An inadequate system of water pollution charges and penalties for water discharges and a lack of enforcement; and
- Insufficient public investments in water and sanitation infrastructure rehabilitation and development.

Most water and sanitation assets are currently in a critical condition and urgently need upgrading, rehabilitating or replacing.

A.6.2 Inadequate Sector Capacity

Several ministries and agencies have responsibilities in the water sector:

- Ministry of Agriculture, Forestry and Water Management (MAFWM)
- Directorate for Water (DW)
- Ministry of Environment and Spatial Planning (MESP) and Serbian Environmental Protection Agency (SEPA)
- Ministry of Public Administration and Local Self-Government
- Ministry of Health
- Ministry of Capital Investment
- Ministry of Energy and Mining
- Ministry of Finance

The responsibilities of the various ministries have not been clearly defined. The DW of the MAFWM and the MESP have overlapping mandates. For instance, the SEPA is developing a

register of point pollution sources, but data are also being collected by the DW to form its own register. Several registers on pollution sources in municipalities have been established by the Municipal Health Institutes. They are in most cases only lists of polluters. In addition, the Ministry of Public Administration and Local Self-Government is responsible for controlling water utilities, including water supply and sewerage treatment services, for tariffs and salary increases. The MAFWM deals mainly with issuance of water management criteria approvals and permits for the use or release of water, as well as encouraging and providing subsidies for investment capital to construct projects. Groundwaters are also considered a mineral resource and are thus to a certain extent under the responsibility of the Ministry of Energy and Mining (and, in the Autonomous Province of Vojvodina, the Provincial Secretariat for Energy and Mineral Resources).

Water management is under the exclusive jurisdiction of the DW and the centralised responsibility of Srbijavode and Vode Vojvodine public companies. The water sector is still divided and managed by administrative districts rather than by river basins.

The main problems and challenges associated with water sector capacity at the municipal level include:

- Local politicians struggling with a multitude of competing funding priorities; those that are more visible and tangible than environmental priorities typically end up higher on the political agenda.
- There is a mismatch between the obligations imposed on municipalities as a result of the decentralisation process, and the financial and human resource capacities at their disposal to manage these obligations.
- Many local governments lack an understanding of environmental infrastructure investments in the context of a market economy, including issues of social affordability, cost recovery, depreciation and the appropriate use of subsidies.
- Local governments and their associated bodies generally lack adequate skills to prepare investment projects and to oversee and cooperate with expert consultants in the preparation of their environmental investment projects. They often have a limited knowledge of possible sources of financing, and lack understanding of their specific rules and requirements.
- Water and waste utilities in Serbia are highly fragmented and cooperation between municipalities is poor. At the same time, there are economic pressures for economies of scale.

In addition, PWCs have a whole host of management problems including:

- Inadequate ownership and usage rights;
- Administrative and political influence and interference in PWC operations;
- Fragmentation of functions and accumulation of unresolved issues;
- Huge water losses, increasing expenses and inadequate tariffs for full cost recovery of operations and maintenance;
- Low level of water metering and of payment collection, large debt write-off, low liquidity and outstanding obligations;
- Inefficient operations, lower quantity and quality of services, poor customer service performance (information, communication, complaint handling) due to poor management, low employee skills and performance system;
- Salaries of staff are very low, experienced individuals often leave for the private sector, and staff turnover is high;
- Worn-out and obsolete equipment and infrastructure;

- A chronic lack of funds for reconstruction and capacity development;
- Non compliance with environmental standards; and a
- Lack of regulated performance indicators.

The need to pay more attention to capacity and human resources development in the management of the water sector was signalled in meetings with MESP, the DW and PWCs during the HRBA scoping mission. Education and re-training of personnel at all levels are needed for the sustainable development of the water sector.

A.6.3. Water Quality and Treatment

The main problems of water quality and treatment in Serbia can be summarized as follows:

- Significant health risks (chronic or infectious diarrhoeal diseases) due to poor infrastructure and contamination of surface water, especially in rural areas where there is no quality control;
- Poor surface water quality posing threats to human health when used for recreation, especially when blue–green algae are present, which can cause serious skin and eye irritation. In some areas of Serbia, the Danubian endemic familial nephropathy (also known as Balkan endemic nephropathy) occurs and seems to be linked to drinking-water quality;
- Presence of ammonia, nitrates, sulphides, iron and mineral oils in the Tisa River Basin; evaporable phenols and manganese in wells in the area of Backa; and arsenic in the Autonomous Province of Vojvodina;
- Almost no effective sanitary protection zones at water intakes (surface and ground waters);
- No effective water pollution charges or water conservation mechanisms;
- Overlapping responsibilities and a lack of coordination among the various ministries and agencies involved in quality control; and
- An insufficient number of specialists and inspectors trained in environmental health.

A.6.4. Sewerage and Wastewater Treatment

The main problems related to sewerage and wastewater treatment are as follows:

- Low coverage of population with a sewerage system especially rural population and Roma settlements;
- Low number and efficiency of municipal and industrial wastewater treatment facilities, resulting in organic and inorganic discharge;
- Differentiated and selective charges for discharge of wastewater from settlements and industry not yet introduced.
- Low level of public investments in wastewater treatment (about 5 to 7 M.€ per year)

A.6.5. Ensure each individual's Right to Water

To ensure each individual's right to water is met, IDPs, refugees and Roma need to be prioritized in efforts to increase access to safe water and sanitation. Additionally, the procedural rights of transparency and participation need to be improved, by inter alia, improving civil society's access to relevant information, better facilitating their participation in water-related decision making and raising their awareness of their right to water and the redress mechanisms available to rights-holders when duty-bearers fail to fulfil their water service delivery obligations. The Protocol on Water and Health (1999) to the UNECE Convention of the Protection and Use of Transboundary Watercourses and International Lakes (1992) should also be ratified.

B. SECTOR PREPAREDNESS OVERVIEW

B1) Relevant policy and strategic documents

Since 2002, Serbia has made progress regarding the elaboration and adoption of key strategic documents concerning environmental protection. The main elements of the national policy and strategy for the water sector are defined in several strategic documents:

- **National Environmental Strategy (NES) (2007) –** This is the fundamental strategic document for environmental protection in Serbia, implemented through environmental action plans and revised every three years. It outlines the fundamental principles for environmental protection and sustainable development and defines the priorities for the institutional framework of the country. The NES envisages short-term and long-term reforms in environmental legislation and institutions. With regards to legislation, the aim is to develop a comprehensive environmental legal framework by adopting sectoral laws and implementing legislation; improving law enforcement monitoring and increasing the capacities of the judiciary system. In terms of institutional reforms, the goal is to improve the horizontal coordination of environmental policy and the integration of environmental requirements into other policies. To this end, 16 environmental action plans have been developed; one of which is the protection of water. The NES highlights water pollution as a major problem in the Republic of Serbia.

- **National Sustainable Development Strategy (NSDS) (2008)** – This is harmonised with the UN MDGs and National MDGs adopted by the Government of Serbia in 2006. The Strategy is based on the globally accepted principles identified in the Declaration on Sustainable Development from Johannesburg, the MDGs and the EU Sustainable Development Strategy, including inter alia, inter and intra-generational solidarity; integration of environmental issues into other sectoral policies; public participation in decision making and the polluter/user pays principle. It includes a SWOT analysis of the strengths, weaknesses, opportunities and threats for sustainable development in Serbia (see Annex 1).

  The strategy identifies water supply as the priority activity in the water sector, and investments in this segment have been highest. It explicitly highlights the importance of achieving the right to water for enhancing environment and natural resources, reducing poverty and achieving sustainable development. Sectoral policy objectives for sustainable use of water resources include, amongst others:
  - To harmonise national water legislation with EU legislation;
  - To increase access to quality water by connecting the population to public water supply systems;
  - To reduce water losses in water supply systems;
  - To increase water quality in reservoirs intended for water supply;
  - To improve the quality of water in watercourses, primarily by building new wastewater treatment plants and ensuring more efficient operation of existing wastewater treatment plants;
  - Rehabilitation and clean up of polluted water courses;
  - Introducing full cost-recovery prices for water and services through the "polluter pays principle";
  - Adequate institutional and territorial organisation of the water sector;
  - Introducing the regulatory function; and

- Providing for public participation and participation of users in all stages of decision-making in the water sector.

- **The Poverty Reduction Strategy (PRS) (2003) –** The PRS explicitly recognises the lack of access to clean water as a key element of the multi-dimensional phenomenon of poverty. It illustrates the unsatisfactory trends in water quality, coverage and service, especially in rural areas and urban slums populated by IDPs, refugees and Roma. It further suggests the deterioration in the quality of drinking water may reverse the positive trend in under five mortality rates in the past. Two strategic priorities are laid down relating to water and sanitation:
  1) *Upgrading the water supply system:* is laid down as a strategic priority. The Ministry in charge of the construction of water supply systems in rural areas, has also set priorities regarding rural water supply. In southern Serbia, priority municipalities are Vranje, Bujanovac and Preševo, and Bor, Doljevac and Bojnik in eastern Serbia. Most investments are small-scale and include repair or construction of new wells, expansion and repair of the pipeline network, as well as chlorifying systems. Most of these activities are to be financed by municipalities, in cooperation with the Ministry.
  2) *'Improvement of sewage system':* is the result of insufficient development in the past, and calls for reforms and fresh financing. Investments are most urgent in the rapidly-expanding poor urban quarters, especially those with large numbers of refugees, IDPs and Roma. Development of wastewater treatment plants is also prioritised.

- **The Water Resources Development Master Plan of Serbia 2002-2013** – this is the main water resources planning document, and serves to establish the basic strategy of water utilization and water protection.

Key Measures to Improve Policy and Strategic Documents

The national strategy and policy framework for the water sector in the Republic of Serbia appear comprehensive and adequate on paper. However, extra efforts are needed to ensure all the elements contained therein are implemented. This is not the case at present, and is partly why the 'right to water' is not the reality for all. Action plans to accompany policy documents of the water sector also need to be developed and properly implemented. Moreover, inter and intra-sectoral coordination and cooperation should be enhanced, which would enable more effective and efficient implementation of policies and strategies in the water sector.

B2) Transboundary Cooperation

The Republic of Serbia is bordered by Hungary to the north, Romania and Bulgaria to the east, Macedonia and Albania to the south and Montenegro, Bosnia and Herzegovina and Croatia to the west. Regional cooperation and good neighbourly relations form an essential part of the process of Serbia's accession to the European Union (EC, 2008). Approximately 90% of all Serbia's accessible water originates from outside its territory. 92% of the country (81,374 km²) lies within the Black Sea Drainage Basin, drained only by the Danube River. This accounts for 10% of the Basin, with the remaining 90% shared between Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Moldova, Ukraine, and Romania. Serbia also shares the Sava River, a tributary of the Danube, with Slovenia, Croatia and Bosnia and Herzegovina; the Tisa River (the biggest catchment and length of any Danube tributary) with Ukraine, Romania, Hungary and Slovakia; and the Tamiš with Romania. The West Morava and Great Morava, (both parts of the major Morava river system in Serbia), is the only one of the five major rivers not to transcend Serbia's borders (Figure 5). Pollution of

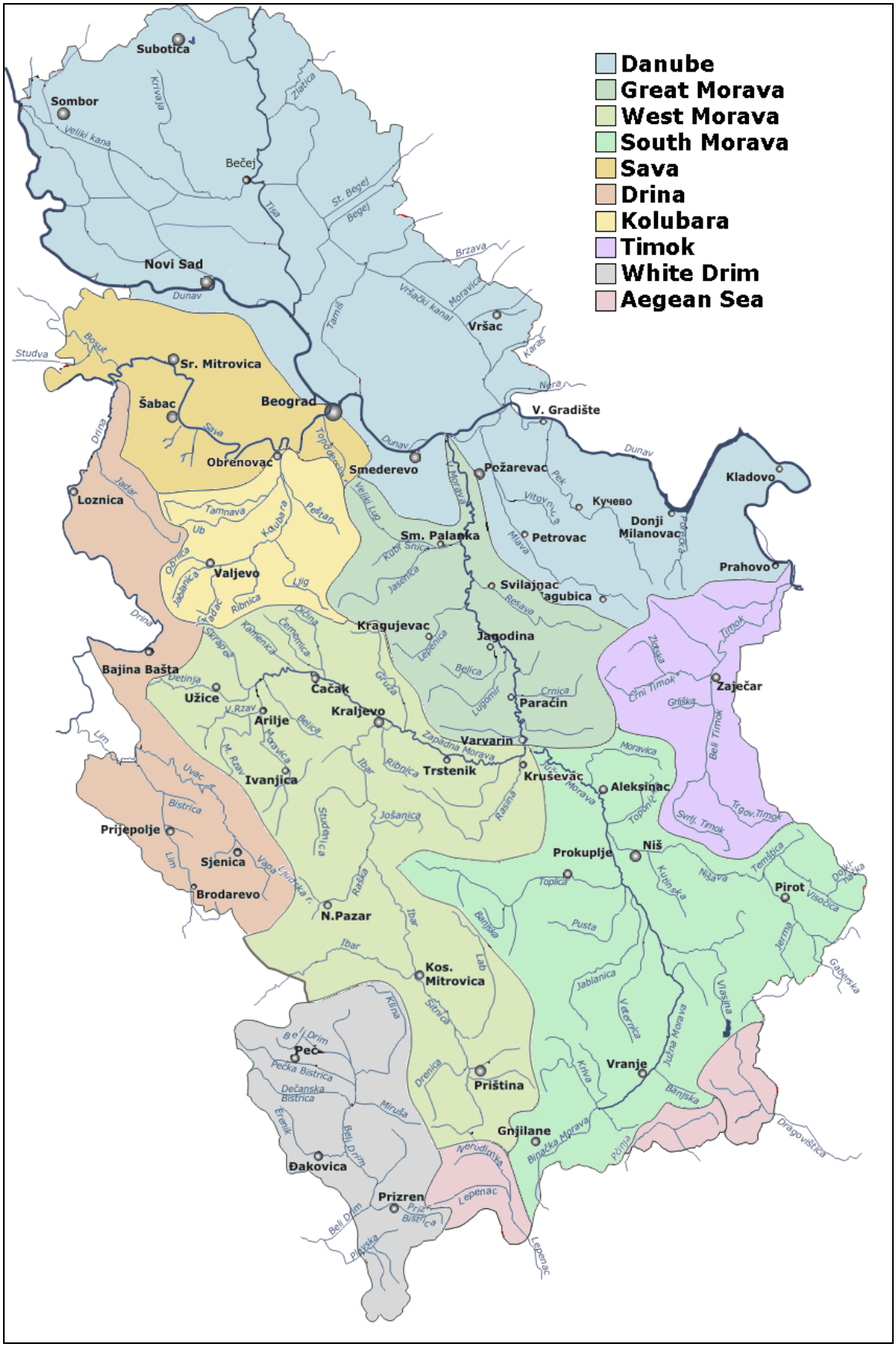

Figure 5: Rivers and main drainage basins in Serbia.
Source: Hydrometeorological Institute of Serbia

these transboundary rivers is contributing to pollution of water sources (WHO, 2009).

Due to its geographical and hydrological location, Serbia is a key player in the sustainable management of transboundary watercourses at bilateral and multilateral levels. Transboundary cooperation on water management is engaged in by the DW of the MAFWM. A regulated international legal regime in the water sector is extremely important for all neighbouring countries and Danube riparian countries, and consequently for cooperation within the International Commission for the Protection of the Danube River (ICPDR[10]) and the success of its activities. Serbia has signed bilateral cooperation agreements with Albania, Bulgaria, Hungary and Romania, although the effect of implementing these agreements has varied from country to country. To date, Serbia has not signed bilateral agreements governing the sustainable management of transboundary waters with Bosnia and Herzegovina, Croatia or the Former Yugoslav Republic of Macedonia, although the DW has carried out some preparatory work in this regard. There has been no recent progress on the demarcation of borders with the former Yugoslav republics, notably including with Croatia on the River Danube (EC, 2009).

Recognising the importance of establishing a framework for multilateral cooperation, the Republic of Serbia has signed or ratified the following agreements, highlighting the country's active stance in regional cooperation on water protection and management:

- **Danube River Protection Convention** (entered into force 19 August 2003);
- **Budapest Declaration** (approved 2001);
- **Framework Agreement on the Sava River Basin** (approved 2002);
- **Protocol on prevention of water pollution of the Sava River** (signed 2009);
- **Convention regarding the regime of navigation on the Danube.**

Serbia is also a member of the International Commission for the Protection of the Danube River (ICPDR) - a transnational body set up to, inter alia, facilitate effective cooperation and management of transboundary waters in the Danube River Basin; the International Sava River Basin Commission and the Tisa River Basin Forum. In addition, international obligations request Serbia to cooperate actively with the i) EU – as a country aiming for EU accession, Serbia must align its regulations pertaining to environmental protection and the protection and management of water to the EU official legislature; and ii) the UN – as a member of the UN, Serbia is obliged to build into domestic legislation key requests derived from relevant UN conventions, directives, and recommendations.

The Government of Serbia needs to adopt by-laws to clarify the country's commitments to introducing EU relevant regulations, including the EU WFD, and provisions of the international multilateral environmental agreements listed above. The Environmental Protection Fund (see B5) could play a key role in transboundary cooperation. Revenues from international bilateral and multilateral cooperation activities to enhance environmental protection are listed among the sources of revenues for the Fund.

A UNDP-GEF 'Tisza River Basin project' is currently being prepared to facilitate and enhance transboundary cooperation further. With a total project budget of $1.9million the aim of the project is to support riparian countries[11] to sustainably manage land and water resources and to address climate change challenges. The completed World Bank-GEF

[10] www.icpdr.org
[11] Ukraine, Romania, Hungary, Serbia, Slovakia.

'Danube River Enterprise Pollution Reduction Project' which had a total budget of $22million and aimed to reduce agricultural nutrient pollution of the Danube, should also have assisted Serbia in meetings its obligations under the Danube River Protection Convention.

B3) Aid in the Water Sector

The Development and Aid Coordination Unit (DACU), within the Ministry of Finance is responsible for overall coordination of international assistance to Serbia. The Inter Sectoral Working Group for Coordination of Humanitarian and Development Assistance (ISDACON) is a government body whose objective is to ensure coordination of activities related to planning and implementation of donations and development assistance at the sectoral and inter-sectoral levels. The Division for EU Integration and International Cooperation and Project Management in MESP has overall responsibility for international cooperation in environmental protection and sustainable use of natural resources. However, in practice, international cooperation in water management and protection is engaged in by the DW.

Considerable expenditures on environmental infrastructure will be required to achieve the environmental priorities of the Government, which are aligned with the standards of the EU *acquis communautaire.* A major challenge is the mobilization of domestic and foreign resources to finance the investments in water and wastewater facilities and reap the associated economic and social benefits. Related to this is the need to ensure efficient allocation of financial resources and optimize the cost-effectiveness of environmental policy measures. A major requirement in this context is an improved information system for environmental expenditures and their financing, including their close monitoring.

The EU

The EU is playing a leading role in supporting Serbia with financial and technical assistance to improve water supply and wastewater infrastructures and related institutional capacity-building. Financial assistance from the EU to Serbia is provided through the Instrument for Pre-accession Assistance (IPA). Initiated in 2007, the IPA represents the main instrument of financial support channelled from the EU and replaces previous pre-accession mechanisms such as European Agency for Reconstruction (EAR) and Community Assistance for Reconstruction, Development and Stabilisation (CARDS) programme, launched in 2001. The main objective of the IPA is to help beneficiary countries to implement the reforms needed to fulfil EU membership requirements and to make progress in the Stabilisation and Association Process.

The IPA is an important source of funding for projects focusing on the institutional strengthening and capacity building of national authorities in the field of environment, sustainable resources management, environmental policy, environmental infrastructure upgrading and reconstruction, water supply and sanitation facilities, municipal waste management, air quality improvement, and environmental impact assessment. The IPA is also regarded as a potential source of funding for urban wastewater management projects, under the condition that a reform of the public utilities is carried out addressing cost-recovery issues. For the 2007-2009 period, the EU has supported 7 projects totalling 33 M €. An Action Plan for development and implementation of a Water Management Information System and associated Decision Support Systems has been finalised and approved by the DW along with the Water Management Information System Investment Costs Plan and Staffing Plan (43.4 M €). The Municipal Infrastructure Support Programme (MISP) is currently funding 5 projects totalling 50 M € for the period 2010-2012. MISP supports inter-municipal

cooperation for the regionalization of environmental services, particularly in waste management and water services such as the Kruševac Regional Water Supply Project in Rasina District. That activity is expected to result in replicable inter-municipal agreements and in the identification of regional projects.

The Priority Environmental Investment Programme (PEIP) funded by the CARDS programme facilitated a process of strategic environmental investment planning by national environmental authorities through identifying and prioritising necessary and relevant projects as well as appropriate project formulation and preparation, for which resources in the countries are limited. In line with the priorities identified for technical assistance by the Government of Serbia and multi and bilateral organisations, the PEIP for Serbia entails 24 projects related to the water sector for the 2008-2010 period (detailed in Annex 2).

Other donors for the water sector

UNDP, in cooperation with EAR, has completed implementation of 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% financing contribution from the local communities, which demonstrated their commitment to a project.

As part of UNDP's *Western Balkans Environment Programme*, UNDP Serbia with MESP (executing entity) have also implemented 'Remediation of the Grand Backa Canal' project. This focused on construction of the missing main waste water collector in municipality Vrbas and rehabilitation of the Sewerage system within territory of municipality of Vrbas to the administrative border of Municipality of Kula. It also involved capacity building of employees of national, regional and municipal institutions dealing with environmental issues, and enhanced construction of the Central Waste Water Treatment Plant and remediation of the Grand Canal.

International Financial Institutions (IFIs) and bilateral assistance amounted to some 130 M € in 2005, of which 4.9 M € (or 3.1%) was for environmental protection. Of this amount, 3.1 M € (or 63%) went to water-related projects. Projects related to donor funded water projects in the period 2000-2006 are outlined in Annex 2.

KfW has committed 132.5 M € to the water sector for the period 2009-2012 including:

- 27M € for Belgrade, Nis, Novi Sad and Kragujevac (programme concluded in summer 2009);
- 45 M € for Sombor, Loznica, Sremska Mitrovica, Sabac, Pancevo, Smederevo, and Kraljevo (ongoing);
- 30 M € for Trstenik, Aleksinac, Jagodina, Pirot, Vranje, Leskovac (in preparation);
- 30.5 M € for financing water (16.8 M €) and wastewater (11.2 M €) infrastructure through Serbian banks with technical assistance of municipalities through the SCTM (2.5 M €).

Japan: Currently, the Serbian government is negotiating with the Japanese government about possible preferential loans totalling 400 M € equivalents, for inter alia, a waste water treatment in Belgrade and several other municipalities in Serbia**.**

Key Measures to Improve Aid in the water sector

1. The relatively limited amount of funding from multilateral and bilateral sources for environmental protection measures and the water sector in particular (less than US$2 per capita for the 2005-2007 period according to OECD) suggests that the implementation of the National Environmental Strategy (NES) and the associated technical upgrading of the water and sanitation infrastructure will have to rely predominantly on the mobilization of domestic resources. One mechanism for strengthening external financial assistance is to give a higher priority ranking to the water sector in national development strategies and in international cooperation**.** Among the EU water-related directives, the following require the heaviest investments from donors: i) Drinking Water Directive (98/83/EC); ii) Urban Wastewater Treatment Directive (91/271/EEC).
2. A key challenge in the implementation of the IPA is Serbia's capacity to absorb funds - that is, to set up the necessary institutions; to prepare the required project documentation, including feasibility studies; and to provide co-financing. The staffing and administrative capacities of project proponents are often inadequate, and in some cases the number of employees involved in project preparation, and their expertise, have been underestimated.
3. The Serbian Government would benefit from adopting lists of priority water projects based on wide stakeholder consultation and transparent prioritisation, thus creating a pipeline of projects. Such a transparent planning process would limit opportunities for political interference and give public and private donors a clear signal as to the country's priorities, allowing for optimal use of their funds.
4. Planning should also include an overview of the status of existing water and wastewater infrastructure investment needs; an overview of available and forecast national spending, IPA spending, and bilateral donor and IFI spending; an analysis of the institutional capacity for carrying out water and wastewater infrastructure investments; and a list of improvement measures. All relevant stakeholders should be involved in the process.
5. Regional cooperation should not to be underestimated, since IFIs and donors often have a regional approach to programming. In addition, by adopting a regional approach the investment market expands and becomes more interesting for investments.

B4) Institutional Framework of the Water Sector

The overall institutional framework of the water and wastewater sector is summarized in Table 5:

INSTITUTIONS	RESPONSIBILITIES
National Authorities	
Ministry of Agriculture, Forestry and Water Management (MAFWM)	Overall responsibility for the water sector.
Ministry of Environmental and Spatial Planning (MESP)	Policy making in the field of waste management.
Directorate for Water (DW within MAFWM)	Assists the water sector in project preparation and IPA applications. Finances technical assistance for project preparation and (partly) actual construction of infrastructure.
Project Implementation Unit. (in MESP)	Assists the waste sector in project preparation and IPA applications.
Ministry of Health (with National and regional Institutes for Public Health network)	Ensures quality of drinking water consistent with water standards applied and takes overall responsibility for drinking water quality control and monitoring.

Ministry of Finance	Sets annual limits to PWC tariff and salary increases and controls PWC financial performance
Ministry of Public Administration and Local Self-government	Responsible of public agencies and PUCs and in charge of PWC reform
Institutes and agencies	
Environmental Protection Agency (SEPA)	Development of the Environmental Information System.
Environment Protection Fund (EPF)	Assists the waste sector in project preparation and IPA applications. Finances technical assistance for project preparation and (partly) actual construction of infrastructure
Jaroslav Cerni Institute for the Development of Water Resources	Assists the DW by preparing baseline studies.
Hydrometeorological Service	Monitoring and quality analysis of surface and ground waters.
Regional and local institutions	
Municipalities	Environmental / water / wastewater management and inspection responsibilities.
Secretariat for Environmental Protection and Sustainable Development of Vojvodina	Bears the same responsibilities as MESP but for the province of Vojvodina.
Public utility companies	Waste and water management at municipal level.
Srbija Vode public company	Maintenance of regional (not municipal) water infrastructure (drinking and wastewater, flood management etc.,) in Serbia.
Vojvodina Vode public company	Maintenance of regional (not municipal) water infrastructure (drinking and wastewater etc) for the Vojvodina region.

Table 5: The Institutional Framework of the Water Sector.

❖ **Directorate for Water (DW)**

The Directorate for Water (DW) under the MAFWM has overall responsibility for water management issues at the national level and for the National Water Resources Development Master Plan. The DW provides water management policy; supplies drinking-water (except distribution); rationalizes the use of water resources; provides flood protection; implements water protection measures; monitors and maintains national and transboundary waterways; issues permits for water extraction and discharges; and performs other duties specified by law. The DW deals with water supply and wastewater systems (collection and treatment) at the national and regional level, but does not have jurisdiction below the regional level; that is, for municipal water systems. DW ensures the distribution of water across the whole country according to local needs, through the 15 regional water supply systems in Serbia. The DW has a Department for Water Supply and Protection. The DW supervises the activities of two regional public water companies. Srbijavode and Vode Vojvodine are responsible for the practical implementation of measures according to the 2010 Water Law: water resources management, protection of water supplies and reserves, flood protection, and protection of water against pollution.

Currently, the DW is reviewing the water supply and waste management plans of all municipalities in Serbia for upgrades; all urban and rural areas – down to the local level – are covered in this effort. The DW conducts and pays for this review and for the development of upgrade plans. The DW co-finances local water supply, water treatment and wastewater treatment infrastructure development up to 50% (70% in the case of poor and/or underdeveloped municipalities), with the balance being covered by municipalities and/or system users.

❖ **Ministry of Environment and Spatial Planning (MESP)**

The Ministry of Environmental Protection and the Agency for Spatial Planning merged to form the MESP in the summer of 2008. The Law on Environmental Protection gives the

MESP the authority to perform state administration functions particularly in the field of water.

The ***Serbian Environmental Protection Agency*** (SEPA) performs the administrative tasks of the state including developing, harmonizing and handling the national environmental protection information system (such as monitoring the state of environmental factors and maintaining the register of pollutants); collecting and unifying environmental data, processing them and compiling reports on environmental status and on the implementation of environmental protection policy. SEPA provides information freely to the public on the Internet in the Pollutant Release and Transfer Register.

The ***Environmental Inspectorate*** is directly responsible to the MESP, operates in all areas of environmental protection in Serbia, and performs both monitoring and enforcement. Inspections are performed as part of an annual plan or can be instigated through reports provided by the Institutes of Public Health. Legislatively, the Law on State Administration and the Law on Environmental Protection define the rights and duties of inspectors. Environmental inspectors do not conduct water quality monitoring and tests which are performed by the public health institutes and their regional and municipal branches.

- **Ministry of Health**

The Ministry of Health's role in water and sanitation refers to Sanitary Surveillance and Inspection, and the Institute of Public Health. The Sector for Sanitary Surveillance and Inspection is responsible for, inter alia, protecting the population against infectious diseases and the public drinking-water supply. So far, inspections have been the main regulatory mechanism. To obtain certification of product safety of water, food and products for general use, the institutes of public health laboratories and the Sanitary Inspectorate collaborate through an annual plan for inspection and random sampling of domestic and imported goods (in production and on the market). This plan has existed for 20 years, and reports show increased compliance. Current work in the Sector targets mainly communicable diseases, while non-communicable diseases are addressed mostly by the Serbia Institute of Public Health checking for chemicals. The activities of the Sector that relate to water include the following:

- *Wastewater* - Activities in public areas are performed by communal inspectors in 170 communities.
- *Bathing water* - Once a week during the summer months, 240 swimming pools are tested for biological pollutants and chlorine by the institutes of public health. Periodic checks are also performed by the Sanitary Inspectorate.
- *Rural water supply monitoring* - All inspections on larger systems are performed at the national level; however, small systems are not well controlled. Local municipal self-government communal inspectors are gradually taking responsibility for these smaller systems.

At the national level, Serbia has the Institute for Public Health of Serbia "Dr Milan Jovanovi_ Batut"; a member of the International Association of National Public Health Institutes. Serbia also has a network of 22 public health institutes at the regional level. These Institutes provide support to local and national authorities in monitoring health and performing public health interventions; but they do not provide inspection services, as all inspectorates are part of the ministries. The Network of Public Health Institutes, composed of the national and sub-national institutes of public health and coordinated by the Serbia Institute of Public Health is staffed by 3.3% (3700 employees) of all governmental health employees and provides

technical support to the policy-making for, and monitoring of environmental health topics. Coordination of different institutes of public health is well established, and no overlap of competencies between institutes of public health exists. The Ministry of Health supports water and health related activities through funding for the institutes of public health.

Regarding water and sanitation, the Serbia Institute of Public Health is mandated to perform:

- health promotion, including community health, health education and health care of vulnerable groups;
- control and prevention of communicable and non-communicable diseases and improvement of emergency preparedness;
- monitoring of the influence of environmental risk factors on the population, control of drinking water safety (water quality control), sanitary surveillance, and control of compliance with hygienic standards through data collected particularly by the Health and Sanitary Inspectorate;
- public health microbiology and clinical microbiology, and
- data collection on health and utilization of health services at the national level, producing health information for effective health reporting to authorities and the public, and maintaining databases of the basic resources of the health care system.

❖ **Hydrometeorological Service (HMS)**

The HMS is in charge of systematic monitoring and quality analysis of surface and ground waters, aquifers, reservoirs together with the Serbia Institute of Public Health and other specialized organizations and institutes based on a two-year programme adopted by the government. HMS issues warnings in case of accidental contamination of water and does special monitoring during water contamination caused by accidents. It also issues early notification and warnings about the occurrence of natural disasters and carries out international obligations in the field of meteorology and hydrology, including the exchange of meteorological, climate and hydrological data and information on registered disasters and catastrophes (fully compatible with the EU meteorological alarm system). In accordance with its jurisdiction defined by the *Law on Hydrometeorological Affairs of Interest to the Country* (OG FRY Nos. 18/1988 and 63/1990), the Republic Hydrometeorological Service of Serbia is the only source of official warning.

❖ **The Ministry of Public Administration and Local Self-government**

The Ministry of Public Administration and Local Self-government is responsible for water utilities, including water supply and sewage treatment. In implementing the Regional Development Strategy, the Ministry is looking to extend the roles, responsibilities and means of municipalities to perform better communal services including water.

❖ **Ministry of Economy and Regional Development (MERD)**

MERD is playing an active role in the reform of Public Utility Companies (PUC), mostly PWCs. With assistance of the EU MISP, a Green Paper and a Draft Strategy have been prepared under the auspices of the Standing Conference for Towns and Municipalities (SCTM) and MERD.

The Green Paper presents a comprehensive menu of options in the areas where reform is needed, including governance and corporatization, regionalization and quality of services, tariff policy, and private sector participation. The purpose of the paper is to explore options and suggest ways forward towards reform. The Green Paper was adopted by the SCTM as representing its own appreciation of the key policy issues to be resolved. Legislation passed

in 2007 devolved the responsibility for PUC reform to MERD and MERD is committed to and responsible for the preparation of an agreed Strategy for PUC reform. MERD has recently established and chairs an Inter-Ministerial Working Group on the PUC reform that will cover three broad areas:

1) Legal – preparation, review and revision of legislation, regulation and ordinances;
2) Organisation and management – at the PUC level and at the level of municipal administration, including human resource management, IT systems; and
3) Regulatory reform – establishing some form of central oversight.

❖ **Ministry of Finance**

The Public Companies and State Aid Sector of the Treasury Department (Ministry of Finance) monitors the performance of PWCs. PWCs are monitored for salary and tariff levels and are given remarks and instructions on their annual plans.

❖ **Municipalities**

Water supply and sanitation services are part of communal services operated at the municipal level according to the Law on Municipal Operations (OGRS No. 16/97 and 42/98). Communal services include water treatment and distribution which includes collection, processing, treatment and supply of drinking water and treatment and disposal of storm water and wastewater. Sometimes these services are combined with municipal waste collection and disposal services. The municipality provides the funds for the construction and operation of sewage disposal facilities and puts a public utility company in charge of the operation of the facilities (see below).

The Standing Conference of Towns and Municipalities (SCTM) serves as a Professional Association for all municipalities in the country. The members pay an annual fee in accordance with their size and their budget. The SCTM acts as a platform for exchange of best practices and advocacy. Municipal Water and Wastewater operators are united in professional associations, such as the Association for Water Technology and Sanitary Engineering and the Waterworks Association.

❖ **Public Water Companies (PWCs)**

In Serbia, there are 150 Public Water Companies and two regional water supply companies: "Rzav" in the region of Uzice, encompassing 5 municipalities and Kolubara regional PWC covering 5 municipalities. The set-up of a PUC is regulated in the Law on Public Companies and Activities of Common Interest ("Official Gazette of the RS", no. 25/2000, 25/02, 107/05 and 108/05). The Law deals with the establishment, the internal organisation, and the operation of Public Companies. The Ministry of Finance through its Treasury sector controls financial aspects of the work of Public Utility Companies, which are indirect budget users. Collection fees are set to cover for operational expenditures yet do not provide for full cost recovery which would enable investments. There is no tariff setting formula and the increase of tariffs has been under Governmental control as of 2006 and the PUCs are obliged to set tariffs upon the projected increase in prices and salaries as determined by the Ministry of Finance for the following year. Tariffs are also subject to the approval of the Municipality. PWCs raise drainage and irrigation charges as well as levies for the use of water infrastructure. In addition to the revenues from water supply and sewage services, PWC 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.

Key Measures to Improve the Institutional Framework

- The need to introduce a regulatory function in the water sector is greatest in the field of public water supply and sewerage services. It should be provided through setting standards and prices for provision of public services; measuring and controlling company performance and fines; controlling and reducing network losses; and through investing revenues generated through increased prices into the rehabilitation of infrastructure. A separate action plan needs to be developed for the construction of waste water treatment plants, after establishing an inventory of polluters and after adopting regulations and standards for their consistent implementation.
- The Government should clarify the competencies of the MESP and those of the DW of the MAFWM as well as the responsibilities of the various inspectorate bodies in light of the new Law of Water.
- The Government should provide more scope for municipalities and public water companies to finance enhancements in water infrastructure by shifting the ownership of the water sector infrastructure to the municipalities and giving them full responsibility for their functioning, including collection of water charges and tariff setting.
- To ensure a safe drinking-water supply, the MAFWM, in cooperation with the MESP and the Ministry of Health, within their competencies should:
  (a) Complete the drafting of the regulation on the protection of drinking water abstraction, and speed up its adoption and further implementation;
  (b) Enforce measures for the protection of sanitary protection zones at water intakes;
  (c) Enable municipalities and PWC with the means to improve drinking water treatment facilities;
  (d) Call on PWCs to reduce losses in the drinking water supply network and to provide for metering of the water quantities used in their networks;
  (e) Provide access to safe water for the population in areas without public water supply systems, with a target of reducing to 15%, by 2015, the proportion of the population with no access to safe water, as stipulated in the MDGs for Serbia; and
  (f) Organize awareness raising campaigns in rural areas to alert the population to the risks of using unsafe water and to prevent outbreaks of water-related diseases.

B5) Economic Framework of the Water Sector

National financial resources for water related investments in Serbia are still very limited. They are currently being disbursed only for technical assistance for project preparation, and in some cases for the construction of infrastructure. Domestic financial resources are supplemented by foreign assistance, which is channelled mainly through the Ministry for the National Investment Plan (NIP), as well as two units of the Ministry of Finance: the DACU and the National IPA Office (NIPAC). The principal sources for water quality improvement investment programmes are budgetary funds allocated by the DW, received from charges for water consumption, abstraction and pollution; the state budget; donations; and loans from IFIs. The DW and the Srbijavode public water management company are responsible for directing accumulated funds towards the construction and maintenance of the water supply and sanitation infrastructure.

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. The available data suggest that somewhat more than 60% of total environmental protection expenditures in 2005 were made at the level of municipalities. In 2006–2007, 20 M € (1.2% of the total state budget

allocations) were directed to environmental protection with 4.9 M € for water supply and wastewater treatment; in 2008, 4.2 M € were allocated for water sector infrastructure including 1.1 M € in 11 Serbian municipalities (REC, PEIP Analytical Reports, 2007–2009). Only about 10% was allocated to wastewater management.

- **Environmental protection spending by the DW**

This 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. As such, more than 50% of the water effluent charges are from wastewater and are therefore spent on wastewater infrastructure, while a comparatively smaller 3.5% are from drinking water charges; it is surprising that so little is spent to improve drinking water infrastructure even though drinking water quality is the key priority objective. Such compartmentalized earmarking is 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. 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 DW amounted to some 7 M € in 2005.

- **Municipal revenues**

Municipal revenues for financing of environmental expenditures are limited to their share (60%) of the pollution charges identified in the 2009 Law on Environmental Protection. As a general rule, following the process of decentralisation there is a serious mismatch between the obligations of the municipalities and their financial capacities to manage these obligations. This is particularly true for waste and water management. Municipal budgets are almost always insufficient to cover investments in water infrastructure, and in most cases municipalities are prevented by legal, political and capacity-related obstacles from raising sufficient resources to carry out the investments needed in order to fulfil their obligations in these sectors. Very often local governments' hands are tied—they are legally prevented from taking on significant debts (by debt service ratio laws), and from adjusting the amount and type of charges imposed on users of infrastructure or penalties for non-payment (by state controls on tariffs). They often face political constraints in the reorganization of utilities to better manage and collect fees to cover the operation and maintenance of their infrastructure. However, with the implementation of the EU acquis, much of this will change for the better in Serbia.

Table 6 provides an overview of PWC charges and revenues from households and companies. 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.

Item	
Water abstraction	730 million m3
Losses	221 million m3
Invoiced volume	509 million m3
Households	368 million m3
Firms	141 million m3
Water and wastewater charge	€ / m3
Households	0.26
Firms	0.61
Revenues (invoiced)	€/million
Households	96
Firm	89
Total	185
Revenues (actual)	135

Table 6: Water and wastewater charges and revenues of public water utilities, 2004
Source: Statistical Office of the Republic of Serbia

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. Financing conditions are often not favourable, and probably most municipalities do not have surplus funds for debt servicing. Some municipalities have received loans from domestic banks for co-financing projects which were mainly financed by international financial institutions, such as municipal water supply infrastructure reconstruction in the City of Subotica funded by EBRD. However municipalities are usually reluctant to take on loans, either due to legal restrictions on debt servicing or insecurity about their repayment capacities stemming from inadequate financial management practices (REC, 2005).

Public-private partnerships (PPP) are possible according to the legislation, but as yet there is no practice in place, nor is it expected in the near future. The Serbian Government is considering future privatisation in the water sector, although it is not yet defined in any strategy, policy or plan. Government preparations for a reform of the PWC are at an early stage.

- **The Environment Protection Fund**

This was established by the Law on Environmental Protection and has been operational since May 2005, with the Ministry of Finance providing initial funding. The Fund is an independent legal entity, and its general mandate is to finance environmental protection projects as well as projects promoting energy efficiency and use of renewable energy sources. The Fund is responsible for the acquisition, management and use of financial resources in these areas. Project support can be provided through loans, guarantees and other forms of collateral, subsidies, financial assistance and donations. Charges for communal waste collection and disposal and wastewater charges do not fall under the earmarking of revenues for the Fund. The Fund has not yet financed any water or wastewater projects.

- **Investment needs in the water sector**

Disaggregated data for investment needs in the water sector are not available yet. There has been several estimates of investment needs in the sector: the Water Master Plan for 2002-2012 put together a water supply investment programme with a cost of 940 M € over a five-

year period (2002-2007) (UNECE, 2002). The EAR estimates that 1.2 M € investments are required to develop the water supply, sanitation and waste sector (KfW, 2005). The 2011-2015 medium-term construction targets of the NES are defined in Table 7 and the planned expenditures for water in Table 8.

Relevant NES policy objectives	Required infrastructure improvements
Water and wastewater resources	
To extend sewerage systems to cover 65% of population by 2015	Construction of 1000km of municipal sewage collectors Construction of 700km of municipal stormwater collectors Construction of 250km of general sewage collectors Upgrading of existing infrastructure; especially sewage pumping stations.
To provide wastewater treatment in agglomerations with organised sewerage system that have significant impact on the recipient waters and especially on sensitive areas To upgrade or renew operation of the existing municipal wastewater treatment plants	Building of primary and secondary sewage treatment plants in 20-30 other largest agglomerations and hot spot locations Renovation of all existing municipal wastewater treatment plants – phase 2 Building sludge treatment facilities
To ensure environmentally and technically sound reuse or disposal of sewage sludge from WWTPs	
To ensure that drinking water in urban areas meet quality standards of the Drinking Water Directive 98/83/EC and extend the centralized water supply system to selected rural areas with unsatisfactory water quality	Upgrading the existing infrastructure, both drinking water treatment and distribution network in agglomerations below 100,000 To build water treatment and distribution network in hot spot rural locations

Table 7: Key infrastructure improvements necessary to address the National Environmental Strategy policy objectives in the medium-term 2011 – 2015.
Source: National Environmental Strategy, 2007

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	**Total**
water	€ 25	€ 40	€ 50	€ 60	€ 80	€ 108	€ 115	€ 121	€ 127	€ 134	**€ 860**

Priority is given to agglomerations above 100,000 equivalent units of pollution (pe), excluding large cities discharging directly into Danube and Sava rivers where wastewater treatment plants will be completed by 2015.

Table 8: Total annual NES environmental expenditures for water and wastewater (excluding indirect environmental and operation expenditure) for 2006 – 2015 (million euros) *Source: National Environmental Strategy, 2007*

In addition, the NES plans investments of 100 M € in extending drinking water supply and improving drinking water quality over the period. Expansion and improvement of urban wastewater treatment will require an increase of the treatment capacity by some 1.6 M equivalent units of pollution (pe). Total investment is estimated at 400 M € (on average at least 35 M € annually after 2009). Operational costs are estimated at 25 M € in 2015. It is estimated that about 1 million inhabitants will be additionally connected to the sewerage system by 2015. Assuming an average cost of 334 € per inhabitant this leads to a total investment of 342 M € or 55 M € annually after 2010. Additional operational costs are estimated at the level of 17 M € in 2015. It is estimated that 10 M € annually will be invested

into improvement of drinking water quality, and 2 M € will be invested annually into improvement of the drinking water distribution network to reduce water losses (which are considered as indirect expenditures).

To reach the relevant policy objectives regarding the industrial wastewater treatment, 10 M € annually will need to be invested after 2010. Operational costs of industrial wastewater treatment are estimated at 17.5 M € in 2015.

Key Measures to Improve Sector Financing
The following sources of funding and financing mechanisms need to be put in place to successfully implement NES objective related to water and wastewater facility improvement:

1) Implementation of Polluter and User Pays Principle

- Water pollution charges should be applied on the overall quantity of wastewater discharged and the pollution, not just on pollution above specified limits. Full implementation of this principle will require effective enforcement of environmental liability rules, monitoring and application of pollution taxes and resource use charges.
- Incentives for industry and energy sector - The role of the state environmental policy should be to provide incentives to industries to invest into pollution prevention and control through application of economic instruments and better enforcement and monitoring of environmental regulations.
- Improved revenues for PWCs - The PWC investment expenditure should be recovered from service fees during a reasonable pay-back period. PWCs should be allowed to gradually increase tariffs and adopt metered volumetric rates to a level that corresponds to full cost recovery for utility services while using targeted subsidies to address affordability problems and improving their overall performance.
- The MAFWM, in cooperation with the MESP, should reconsider the current system of earmarking water revenues, and optimize their allocation according to national priorities in the water sector.

2) State and municipal financing:

- The Government should promote legal and institutional arrangements which strengthen the capacity of municipalities to prepare investment projects enabling them greater access to domestic capital markets for financing these projects by:

a) Supporting the preparation of multi-annual investment plans for municipal water infrastructure development;
b) Encouraging local self-government units to invest in water and wastewater infrastructure through greater use of loans based on existing legislation on public debt;
c) Considering the need to relax existing borrowing constraints; and
d) Developing guidelines and procedures for private-sector involvement in the provision of water supply and wastewater services at the municipal level.

Non revenue water by PWCs should be reduced through: (i) reduction of physical losses from the water network (leakages); (ii) identification and elimination of illegal connections; (iii) installation and monthly reading of meters; and (iii) on-time billing and payment collection and application of the disconnection policy in the case of non-payment.

The Government should (i) review its short- and medium-term budget plans with a view to allocating funds for water and wastewater infrastructure improvement that are commensurate with ambitious but realistic policy targets; (ii) ensure that an adequate share of public

revenues is channelled to the MESP as well as the Environmental Protection Fund for water supply and wastewater services.

B6) Water Sector Capacity

According to the EC, institutional capacity and technical and human resources in Serbia remain insufficient, especially at the local level. Better coordination is needed with the central level, and greater attention will have to be given to enforcement (EC SEC, 2009). The current capacity of environmental and water sector related institutions (ministries, agencies etc.) will be insufficient for the administration of all the requirements arising from the adoption of the EU acquis communautaire. The increasing volume of environmental legislation will force governments to alter human resource capacities accordingly, or face understaffing. At the same time, it is highly probable that the Ministry of Finance will exert pressure in the opposite direction and call for staff cuts due to budgetary constraints, agreements with IFIs etc. The availability of environmental and water experts in general, and of environmental investment experts in particular, is of the utmost importance and governments should adapt the educational system (including university programmes) to the new situation. Current staff should also receive training on the new environmental acquis.

The level of enforcement of water legislation in Serbia is low due to the weak capacity of the inspectorates and long years of a legal vacuum in the field of environment and water. Enforcement is no less important than transposition, as some of the new water or waste management systems would not function properly without a sufficient level of enforcement of the legislation. The links between different inspectorate bodies and between the inspectorates, police and prosecution are weak. There is little awareness on the part of companies and citizens of the importance of compliance with environmental legislation, which makes the inspectors' obligations even more difficult to implement.

Local-level institutions will be increasingly faced with the obligation to implement a growing volume of legislation following the process of decentralisation. If human resources are not properly planned, local-level institutions will also suffer from a chronic lack of human capacities. The status and competency of a PWC are directly linked to the success of any potential investment. Although a large proportion of the work must be carried out at the local level (since utilities are owned by the municipalities), the impulse for reform and the principles of reform should come from the central level.

Key Measures to Improve Sector Capacity

- The EU environmental and water acquis will require the overall strengthening of institutions and human resources competencies. In particular, there should be a comprehensive effort to educate students and train existing human resources on environmental health and EU water and wastewater related standards and norms. Training courses for senior professionals in environmental health risk factors, principles and management should be developed to overcome the lack of experts in this field. Also, due to the lack of modern laboratory facilities, the training in toxicology at the Faculty of Pharmacy of the University of Belgrade is rather theoretical.
- Inspectorate bodies should be strengthened in terms of numbers, competence, and equipment along with delineated responsibilities to avoid overlap. Increased human resource capacity should be accompanied by increased financial resources and the provision of targeted training.

- Institutional reforms of PWC are necessary in order to improve their efficiency by clarifying ownership and management responsibilities and by training and monitoring human resources to perform better services, especially toward customers. Introducing strategic planning in PWC and increasing the autonomy of PWC would allow for more efficient operation, improved performance and access to market capital.
- Corporatisation and more advanced types of reforms such as public-private partnerships and partial or full privatisation of water services could bring in the necessary expertise and capital to achieve the desired service quality and economic sustainability.
- Regionalisation of the water sector that would lead to economy of scale requires an appropriate institutional form to bring those who intend to use the regional facilities under one umbrella. It represents a serious challenge to municipalities that are traditionally used to solving problems on their own. They should be assisted in this process and active mediation should be offered by national authorities in collaboration with the SCTM.
- There should be an ongoing effort to increase capacities for project preparation. This should be done by informing and training project proponents (mainly local governments, PWC and regional institutions) on key aspects of presenting water and wastewater projects as affordable, credible investment projects. Local governments should take advantage of external project preparation assistance. All key stakeholders (local governments, PWCs as well as NGOs and citizens) need to be involved to the appropriate extent in project planning

B7) Water and climate change

There are no official data on how climate change will affect the hydrographic regime in the medium and long term. Studies made by the World Meteorological Organization have defined Serbia as a moderate area of influence of future climate changes. However, it will suffer all the extremes of one of the three main scenarios defined by the IPCC Fourth Assessment Report (2007), but only in a moderate form. The Government is a party to the United Nations Framework Convention on Climate Change (UNFCCC), but the First Communication to the UNFCCC has not yet been produced. Serbia participates in the initiatives of the United Nations Convention to Combat Desertification (UNCCD), although it is not a party to the Convention. Serbian representatives – as observers – attended the Second Technical Workshop on the Establishment of a Subregional Centre Relating to Drought in South- Eastern Europe in the Context of the UNCCD, which was held in Sofia in April 2006. Each participating country was invited to develop national guidelines for implementing a National Drought Strategy, a task that Serbia has yet not tackled. The Institute for Water Management "J.Cerni" has assessed groundwater resources and quality and mapped out aquifer vulnerability as a base for master plans and climate change scenarios.

Key measures to Improve Serbia's Capacity on Climate Change Mitigation and Adaptation related to Water Resources

- Comprehensive analysis and assessment of the impacts of climate change on access to and quality of drinking water and management of wastewater, including major risks associated with drought and flood occurrence and threats to water quality;
- Coping strategies should be designed implemented and monitored (mitigation, adaptation and disaster risk management); and
- The First Communication to the UNFCCC should be created.

Annex 1: SWOT analysis of strengths, weaknesses, opportunities and threats to achieving sustainable development in Serbia.

Source: National Sustainable Development Strategy (2008)

Strengths	Weaknesses
▪ Good geographic location of the country; ▪ Potentially high quality of human resources; ▪ Established legal bases of a democratic and open society; ▪ Reform processes are underway in most sectors; ▪ Growth of the private sector; ▪ Establishment of trust at regional level and increased reputation of Serbia in the region; ▪ Increased awareness of the need to plan sustainable development at local level; ▪ Reduced current dis-balances in financing the funds for social and pension-disability insurance; ▪ High level of biodiversity; ▪ Diversified natural resources; ▪ High level of cultural infrastructure and cultural values; ▪ Existence of Diaspora significant in terms of expertise and financial terms; ▪ Preserved quality of the environment in areas that are not industrialized.	▪ Insufficient level of public trust in institutions; ▪ Strong differences in regional development; ▪ Slow privatization; ▪ Insufficient level of green-field investments; ▪ Insufficient investment in economic development; ▪ Lack of transport and municipal infrastructure; ▪ Continual brain drain even after 2001; ▪ Very low share of GDP invested in education and science; ▪ Very low share of GDP invested in social protection; ▪ Lack of consensus regarding future regionalization and decentralization; ▪ Ethno-centrism among the ruling elite; ▪ Unfavourable social-economic position of the young; ▪ Low level of citizens participation; ▪ Lack of planning approach to the use of natural resources; ▪ Excessive pollution of the water, air and soil; ▪ Inadequate waste management practice; ▪ Lack of incentive measures to reduce pollution.

Opportunities	Threats
▪ Integration in the EU; ▪ Integration in EU funds; ▪ Cooperation with the Diaspora; ▪ Introducing EU standards and norms to provide quality of the environment; ▪ Finalization of privatization process; ▪ Further development and strengthening of democratic institutions in the area of social development; ▪ Reduced corruption and increased level of transparency; ▪ Strong political will to implement legal reforms; ▪ Increasing PPP; ▪ Introducing the concept of cleaner production; ▪ Increasing energy efficiency and rational use of raw materials, and decreased transport intensity.	▪ Increasing level of intolerance and social division; ▪ Increased unemployment, poverty, indebtedness and slowed economic growth; ▪ Lagging behind the region due to unresolved political issues; ▪ Possibility of a new isolation (open or discreet); ▪ Unresolved issues in fight against corruption and organized crime; ▪ Unfavourable demographic trends; ▪ Possible lack of political will to implement legal reforms; ▪ Insufficient public information and insufficient public awareness; ▪ The principle "not in my back yard"; ▪ Lack of investments to build infrastructure; ▪ Starting industrial production with obsolete technologies (creating a «heaven for polluters»); ▪ Increased level of transport using bad quality fuels.

Annex 2: Overview of current water and wastewater projects funded by multilateral and bilateral cooperation (2008-2010)				
PROJECT TITLE	**DESCRIPTION**	**TOTAL COST (M €)**	**FUNDING NEEDS (M €)**	**PROGRESS**
Rejuvenation of Lake Ludas	Improved water resources management for the region. Population benefiting directly from project: 150,000	3.861	3.861	
Collection and treatment of wastewater in Vladicin Han municipality	Reduced transboundary water pollution. Population directly benefiting from project implementation: 24,000	5.54	4.99	Municipality has applied for NIP with this project, now final decision regarding financing is expected
Reconstruction of the water source of "Setonje" and transport pipeline —	Covers Petrovac in Branicevo district	3.2	3.2	
Feasibility study for collection, transportation and treatment of wastewater in 10 municipalities	Reduction of transboundary water pollution in Arilje, Cuprija, Ivanjica, Koceljeva, Krusevac, Kursumlija, Loznica, Nova Varos, Prijepolje, Sjenica,	1.6 for study	19.5	Study completed in 2009 50% funding eligible from IPA
Feasibility studies for collection, transportation and treatment of wastewaters in the municipalities of Vranje and Uzice	Reduction of transboundary water pollution.	0.365	0.365	Pre-feasibility study completed. IPA funding is expected for Uzice part.
Protection of the Lim River: Wastewater collection and treatment in 4 municipalities	Covers municipalities of Prijepolje, Priboj, Nova Varos and Sjenica	22.5	22.14	
Construction of WWTP(s) for the Ibar River		9.5	9.325	
Protection of the Raska River – Wastewater collection and treatment in Novi Pazar and Raska municipalities		12	11.66	Project supported by UNDP PRO programme
Water utilities in technological park zone in Vrsac		2.3	2.3	Funding is expected from municipality of Vrsac (EUR 0.2 million), NIP (EUR 0.3 million) and EAR (EUR 1.8 million).

Upgrade and extension of wastewater treatment plant and network and sludge line in Subotica	Capacity increase from 27.000 m3/per day to 36.000 m3/per day and to 72.000 m3/per day in the rainy season	23		Completed in May 2009--23 M € (incl. EU 10 M €; EBRD 9 M € loan; Subotica Municipality 3 M €)
Kolubara-Prerada" Regional Water Supply Scheme in Valjevo, Mionica, Ub, Lajkovac, Lazarevac municipalities	Creation of a regional water supply operator, improved WTP and distribution network	42.8	42.8	Feasibility study completed Funds from IPA 15 M €, government grant 15 M €; loan 12.8 M €
Construction of the missing main waste water collector in Vrbas-Kula	Connection to the main waste water collector will enhance construction of CWWTP (communal and industrial waste waters) and remediation of the Grand Backa Canal	4.1 M $		Completed in May 2010. Funds from UNDP 1.2 M $; Government 1.5 M €
Waste Water Treatment Plant and Sewage Collection in Vrbas-Kula	WWTP for 64,000 new residents and sewage collection for 20,000 new residents	23.6	23.6	Funds from IPA 15 M €; Government 5.9 M €, municipalities and region 1.4 M €)
Water Treatment Plant in Indija and Replacement of 7 Well Pumps	More reliable and stable water supply and enable connection of new consumers in Čortanovci, Ljukovo, Jarkovci	7.7	7.7	Feasibility study completed Funds from EAR Grant 2.4 M €; Vojvodina Capital Investment Fund: € 2.737 M €; NIP: 1.435 M €
Rasina District Regional Water Supply Project for Kruševac, Aleksandrovac, Ćićevac, Varvarin Trstenik, Paraćin and Ćuprija municipalities	Provision of adequate drinking water supply for additional 75.000 people in 6 municipalities	14	14	Feasibility study completed Funds from IPA 10 M €; NIP 2.1 M €; municipalities 1.34 M €
Leskovac Wastewater Collection and Treatment and Water Supply Extension	Water supply extended for 12,000 new residents and sewerage extended for 20,000 new residents and construction of a WWTP	28	28	Feasibility Study completed Funds from IPA grant 21 M €; Government 4.8 M €; municipalities 2.6 M €
Remediation of the Grand Backa Canal	Completion waste water network in municipality Vrbas, capacity building, enhancing construction of Central Waste Water Treatment Plant and remediation of Grand Backa Canal.	2.1M $		
Belgrade, Nis, Novi Sad and Kragujevac	Drinking water and industrial water systems have been repaired	27		Programme 1 and 3 of KfW completed in summer 2009
Improvement of the supply of safe	Linked to PUC reform in medium	45	Ongoing since	KfW in partnership with Serbian Municipal

drinking water in Sombor, Loznica, Sremska Mitrovica, Sabac, Pancevo, Smederevo, Kraljevo	size municipalities		2008	Infrastructure Agency
Improvement of the supply of safe drinking water in Trstenik, Aleksinac, Jagodina, Pirot, Vranje, Leskovac.	Linked to PUC reform in medium size municipalities	30	30	Preparation phase -- KfW in partnership with Serbian Municipal Infrastructure Agency

Annex 3. Acronyms

CARDS	EC Community Assistance for Reconstruction Development and Stabilisation Programme
CSOs	Civil Society Organisations
DACU	Development Aid Coordination Unit of the Ministry of Finance
DW	Directorate for Water
EAR	European Agency for Reconstruction
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EU	European Union
EU MISP	EU Municipal Infrastructure Support Programme
EU WFD	EU Water Framework Directive
GDP	Gross Domestic Product
HMS	Republic of Serbia Hydrometeorological Service
HRBA	Human Rights Based Approach
ICPDR	International Commission for the Protection of the Danube River
IDP	Internally Displaced Persons
IFIs	International Financial Institutions
IMF	International Monetary Fund
IPA	Instrument for Pre-accession Assistance
MAFWM	Ministry of Agriculture, Forestry and Water Management
MDG	Millennium Development Goals
MERD	Ministry of Economy and Regional Development
MESP	Ministry of Environment and Spatial Planning
MISP	EU Municipal Infrastructure Support Programme
NES	National Environmental Strategy
NSDS	National Sustainable Development Strategy
OECD	Organisation for Economic Cooperation and Development
PEIP	Priority Environmental Investment Programme
PUC	Public Utility Company

PWC	Public Water Company
REC	Regional Environmental Centre
SCTM	Standing Conference of Towns and Municipalities
SEPA	Serbian Environmental Protection Agency
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNMIK	UN Interim Administration in Kosovo
WHO`	World Health Organisation

Annex 4. List of Persons Met

Belgrade Centre for Minority Rights - Andrea Colak, Executive Director.

Belgrade Waterworks and Sewerage - Vladimir Jankovic (Deputy General Manager) and Zoran Radivojevic.

"Environmental Ambassadors" NGO - Andjelka Mihajlov, and Zeleni Vrbas.

Environmental Movement of Vrbas NGO -Ratko Djurdjevac.

EU MISP - Nenad Colic.

Grand Backa Canal Environmental Hot Spots Project - Dobrila Simic (Project Manager).

Institute for Public Health of the City of Belgrade - Branislava Matic, Snezana Dejanovic and Katarina Spasovic.

Institution of the Ombudsman -Violeta Coric and Jablanka Tabas.

MAFWM, Water Directorate - Vladimir Tanackovic.

MESP - Nebojsa Pokimica, EU integration.

Ministry of Health - Dr. Dubravka Saranovic-Ralcic.

Ministry of Human and Minority Rights - Ljuan Koko (Head Roma National Strategy Secretariat).

PUC "Belgrade Water and sewage" - Zoran Radivojevic and Vladimir Jankovic.

SCTM - Ljubinka Kaludjerovic.

UNDP Serbia Team Leaders and Programme Officers.

UN HABITAT, Zlata Vuksanovic-Macura.

UNHCR - Olivera Vukotic.

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