

**WATER STRATEGY**

**REGIONAL APPROACH**

**FOR SOUTH EASTERN EUROPE**

**October 2001**

**The strategy paper was prepared at the request of the Stability Pact for South by the staff of the EBRD. We are grateful to representatives from the European Commission, the Council of Europe Development Bank and the Infrastructure Steering Group (Stability Pact for South Eastern Europe) for helpful comments on earlier drafts.**

**The views presented in the paper are those of the authors only and not of the EBRD or its Board of Directors.**

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# **WATER STRATEGY**

## **STABILITY PACT FOR SOUTH EASTERN EUROPE**

### **1. INTRODUCTION**

Improving municipal water and wastewater infrastructure and related services facilitates the transition process in the countries covered by the Stability Pact for South Eastern Europe ("Stability Pact") in a number of ways. Reducing costs and increasing the reliability of services helps stimulate the emergence and development of commercial and industrial enterprises. Improvements in residents' living conditions increase public confidence in democratic local government and in the ongoing reform efforts. The institutional and regulatory reforms that accompany the decentralisation and commercialisation of water and wastewater infrastructure and private sector involvement are additional crucial elements for strengthening local utility service delivery. Moreover, the positive environmental benefits of these projects frequently extend beyond the locality into the region.

Therefore, activities and investment in the municipal sector make an important contribution to the transition process towards stable market oriented democracies while also addressing pressing environmental problems, many of which have a regional impact. Operations to support municipal service provision should therefore incorporate the elements listed below:

- decentralisation of municipal and environmental infrastructure provision to strengthen local democracy;
- environmental protection and clean-up;
- commercialisation and corporatisation of service provision to underpin sustainable service provision in the medium and long term;
- application of the polluter pays principle through cost recoverable tariff setting;
- development of adequate regulatory structures;
- promotion and optimisation of private sector involvement, where feasible.

Environmental improvement is at the core of the south-eastern Europe water strategy and therefore projects matching the above parameters should also be consistent with:

- objectives set out under the Community water policy of the EU and international conventions, such as the Convention for the Protection of the Danube River Basin, the Black Sea Convention and the Barcelona Convention;
- an integrated approach to water management integrating, where possible, initiatives across administrative and political boundaries.

Although most water and wastewater projects fall under municipal mandates, the impact of improving water conditions, particularly with respect to wastewater treatment, will result in long term regional benefits through downstream

improvements of the Adriatic and Black Sea as well as for the Danube and other key river basins.

The water and wastewater sector is one of the major investment priorities for countries of the Stability Pact. Water supply systems include raw water intakes, groundwater extraction and transmission pipes, drinking water treatment (purification) plants and transmission pipes, and water distribution networks (including pumping plants, storage reservoirs etc.) Wastewater systems include the sewerage network, pumping plants, reservoirs and wastewater treatment plants.

## **2. TRANSITION OBJECTIVES**

### **2.1 Decentralisation of municipal and environmental infrastructure provision**

Operations of the Stability Pact support the decentralisation of responsibility for the funding and provision of municipal services. Operations encourage municipalities and utilities to assume service responsibilities effectively and become accountable to their local political constituencies.

Involvement by the donor community and IFIs not only aims at financing critically needed water and wastewater infrastructure investments, but also at strengthening service delivery systems and building up the capacity of local authorities and their enterprises to provide adequate and reliable public services. This support encourages a shift in attitudes from reliance on government grants towards financial self-sufficiency.

### **2.2 Environmental improvement**

Ameliorating the difficult living conditions in south-eastern Europe is a fundamental goal of the transition process. Investments in water and wastewater services have a direct beneficial impact on living standards through the environmental benefits they generate not only locally, but also on a regional basis given the trans-boundary nature of many water-related environmental issues. While these benefits are important in their own right, improvements in the quality of the environment may also positively influence the transition process, for example by increasing labour productivity through improved public health and facilitating the development of tourism. Specific objectives of operations aimed at improved local services are:

- approximation to and harmonisation with EU environmental standards;
- improvement in public health;
- surface water and groundwater protection;
- water conservation;
- natural resource preservation;
- surface and groundwater protection through integrated water and wastewater management in catchment areas.

### **2.3 Commercialisation and corporatisation of service provision**

The commercialisation of municipal service provision is a key element in ensuring financially sustainable service provision in the medium and long term. One of the first steps in this process is the corporatisation of local service providers, by separating these providers from government and transforming them into legally, financially and managerially autonomous corporate entities — usually joint-stock companies owned by regional or municipal governments.

An important focus of corporatisation is improved financial and operational performance, which will ensure that improved operational and environmental standards of municipal service provision are sustainable.

### **2.4 Promotion and optimisation of private sector involvement**

The countries of the Stability Pact suffer from significant investment needs, which the public sector is unlikely to be able to provide on its own. Improved municipal service provision will therefore require private sector involvement. In addition, adequately structured Public Private Partnerships lead to improved capital and operating efficiency provided that a legal and economic framework is in place to support these types of investments.

Where full transfer of responsibility for municipal infrastructure and services to the private sector is politically unacceptable or economically undesirable (because of inadequate regulation or insufficient capacity to enforce regulations and contracts), specific risks may be transferred to the private sector. Financing covers a wide range of situations: from service contracts, management contracts, concessions and BOT (build-operate-transfer) contracts, to public-private joint ventures, and full utility divestiture.

### **2.5 Development of regulatory structures and capacity**

The promotion and support of the establishment of a regulatory environment opens markets for municipal services, and provides economic incentives and sanctions for public and private operators to improve efficiency.

## **3. FINANCING DECENTRALISATION**

When financing local services, various options are open to the partners of Stability Pact:

- *Sovereign-based financing*, mainly in the form of sovereign loans or sovereign-guaranteed loans to municipalities or municipal utilities;
- *Non-sovereign municipal financing*, generally taking the form of loans to municipalities or to municipal utilities wholly or majority-owned by municipalities;
- *Private financing* of municipal utilities (on a corporate basis) or of special-purpose vehicles (on a project finance basis) that are owned or controlled by private operators.

- *Grant funding* to support certain components, such as wastewater treatment, which have significant positive environmental externalities, the financing of which would otherwise have to be postponed due to current affordability constraints.

In order to preserve the limited sovereign borrowing and guarantee capacity of the governments of south-eastern Europe, non-sovereign municipal financing increasingly becomes important in countries that are further advanced economically or have implemented necessary reforms of their system of municipal finance.

#### **4. SUGGESTED PROJECT PRIORITIES**

Within the framework of the Stability Pact, EBRD, other IFIs and donors are ready to develop water and environmental projects, with a particular emphasis on the following:

- 1 Projects that have an important positive environmental trans-boundary impact, for example through elimination of environmental hot-spots by way of adequate wastewater treatment for major polluters, and which are supporting compliance with integrated water management and moves towards harmonisation with EU environmental standards.<sup>1</sup> For accession-countries, compliance with the *Acquis Communautaire* will be an important focus.
- 2 Projects that provide institutional demonstration and decentralisation examples for the region. This includes in particular the facilitation of Public-Private Partnerships, and projects that facilitate directly long term sustainable public finance solutions at the local level. This will require the up-front commitment of utilities, local and national Governments to address key issues of tariff reform and other enabling conditions for sustainable municipal and environmental services as well as private investment.

Operational and financial performance improvements are a key factor for the success of sustainable local infrastructure investments. Selected projects therefore would include a significant element of technical assistance support to strengthen the institutional capacities of municipalities and utilities. Moreover, efforts will be made to incorporate the needs of small municipalities in the region. Given the significant institutional, economic and financial challenges facing smaller municipalities, such projects would require significant donor support for institutional strengthening and grant contributions.

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<sup>1</sup> In general, projects will aim at compliance with: Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000, establishing a framework for Community action in the field of water policy; Council Directive 98/83/EC on the quality of water intended for human consumption which has been designed to safeguard human health by establishing strict standards for the quality of drinking water, and the Council Directive 91/271/EEC concerning urban waste-water treatment, aiming to protect surface inland waters and coastal waters by regulating collection and treatment of urban waste water and discharge of certain biodegradable industrial wastewater.

## **5. INVESTMENT NEEDS<sup>2</sup>**

### **5.1 Albania**

#### **5.1.1 Background**

Water supply infrastructure in the urban centres of Albania is in poor condition and, in the absence of effective management and adequate maintenance, continues to deteriorate. In many places water is currently available for only 2 to 4 hours per day, water quality is deteriorating, pumping plants are in need of repair or replacement, water storage facilities are inadequate, water distribution pipelines are severely corroded with high leakage. The largely uncontrolled urban development had led to a proliferation of illegal connections and the systems are severely overloaded.

Wastewater systems are generally combined waste and surface water systems. In many cases these are undersized, the collection networks are in a serious state of disrepair with little maintenance, blocked and overflowing sewer lines and missing manhole covers.

There is no treatment of wastewater and as a result raw sewage is discharged untreated to adjacent surface watercourses, rivers and seas. As a result of the inadequate and deteriorating condition of both water and wastewater systems, sanitary conditions are poor and infiltration of polluted surface water into the potable water supply poses a serious risk for public health.

#### **5.1.2 General Framework/Sector Organisation**

The Government of Albania has recognised the critical importance of the water/wastewater sector and has enacted legislation to provide for the upgrading of existing infrastructure. It adopted a Water Infrastructure Development Policy in December 1999 after a common agreement with the Donors on the World Bank Project at the 1999 International Donor Meeting held in Rome, which is principally directed towards required investments, tariff and privatisation policy.

The Water Infrastructure Development Policy needs to be augmented and extended to address the establishment and implementation of a comprehensive Strategy for the Water Sector. This needs an integrated approach to the main issues of:

- (a) Development of the Strategic Concept to address;
  - Legislative and regulatory policies
  - Protection and conservation of the country's rich water resources
  - Prioritisation of water uses
  - Rural development policies
  - Urban development policies
  - Integrated approach to water and wastewater

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<sup>2</sup> The discussion on investment needs reflects the current situation in the region, which will evolve over time.

- (b) Institutional Framework
  - Legislation and formation of regulatory agency
  - Operation and maintenance structures and agencies
  - Implementation structures and agencies
  - Infrastructure investment and funding requirements
  - Continued viability and sustainability of the water sector
  
- (c) Operational Issues
  - Land use planning
  - Urban development master plan
  - National norms and standards
  - Institutional prerequisites

There is now urgent need for the development of an overall strategic approach by both the Government and the Donor partners to better identify planned contributions by the donors leading to greater effectiveness and return of completed investments.

### **5.1.3 Key issues**

#### ***Institutional arrangements***

The existing water and wastewater utilities in the various cities are ill equipped to manage in a transition environment. There is a significant need for institutional strengthening to transform utilities into financially viable service providers.

#### ***Merging of Water and Wastewater Operations***

Non-payment of water and wastewater bills is a key issue for the sector in Albania. Therefore, to ensure that users contribute equally to water supply and wastewater elements and to achieve full cost recovery, it is essential that both operations be merged into a unified structure and that a single bill is issued to users.

#### ***Corporatisation of Existing State Enterprises***

The government of Albania decided that a management contract approach, whereby foreign water/wastewater utilities undertake the running of water/wastewater operations in selected cities on a commercial basis, would be adopted. However, in order that tendering for management contracts can proceed, it is first necessary to legally transform existing municipal to commercial ventures. To date only eighteen of fifty water supply enterprises have been identified as candidates for corporatisation of assets.

#### ***Water and Wastewater Tariffs***

To ensure that the required revenue streams to provide for future investment in water and wastewater infrastructure are achieved, it is essential that realistic tariffs are set and liberalisation of the current tariff cap was authorised by the Council of Ministers in 1998.

## **5.2. Bosnia and Herzegovina (BIH)**

### **5.2.1 Background**

Water supply systems are mostly focused on urban areas and very rarely cover rural parts of municipalities. Villages either have their own small water supply systems or no running water at all. Before the war about 60% of the total population was covered by public water supply systems (95% in urban areas and 35% in rural areas). Gross specific consumption was in a range 200 – 700 litres per capita per day (l/capd), whilst residential consumption was in a range 100 – 200 l/capd. Households and industry comprised about 35% of total consumption each and losses comprised remaining 30 %. The current situation is not much different.

Most often sources of potable water are either captured natural springs or wells (i.e. bore holes usually drilled along rivers or at foot of mountains). The advantage of such sources is the good water quality (so far no need for purification) but the main disadvantage is their limited yield. Some urban areas already face serious shortages of potable water (for example Tuzla) and more will face the same problem in very near future (i.e. Sarajevo, Banja Luka) as the demand is rapidly growing due to increasing domestic water consumption and the revival of industry.

The situation concerning sewerage is difficult. In the whole of BIH there are very few wastewater treatment plants and none appears to be in function at the moment. Collected wastewaters are directly discharged into rivers and lakes.

### **5.2.2 General Framework/Sector Organisation**

Each municipality has its own water supply and sewerage system organised into municipality owned public water supply companies “Vodovod i Kanalizacija” (VIK). Similarly, each municipality has its own system of solid waste collection and disposal. The only exceptions are Sarajevo and Mostar. In Sarajevo VIK covers 6 municipalities comprising the town of Sarajevo and is owned by the Sarajevo Canton. The town of Mostar is actually still divided into a Croat-controlled and a Bosniak-controlled part. Each part further divided into three municipalities. Accordingly there are two VIKs, each covering territory of three municipalities.

Water supply companies (VIKs) are established, owned and controlled by the municipal authorities (except Sarajevo and Mostar, as described above). The municipal authorities approve tariffs that are proposed by the VIKs. The tariffs are usually structured only to cover the companies’ operating costs, excluding provisions for system maintenance. The average breakdown of tariff is: water - 60%, wastewater - 20%, service tax 10% and water management fee – 10%. The Bill Collection Ratio (BCR) remains low and rarely exceeds 50%, with the exceptions of Sarajevo and East Mostar where the BCR was 75% in 1999.

Before the war one Public Company for Water Management (Vodoprivreda) existed for the whole of BIH. It prepared sector strategy, short and long-term investment plans and also managed the investments (i.e. water supply systems, flood protection, irrigation etc.). The revenue of the Vodoprivreda came from several water-related fees

(see below) imposed on customers. Today there are three Vodoprivredas: one in the Republic of Srpska (RS), which is based in Pale, and two in the Federation of Bosnia and Herzegovina (FBiH), which are based in Sarajevo and Mostar, each covering one of the two main watershed areas: Sava River and Adriatic Sea.

Before the war there was also one Institute for Water Management (Zavod). It had a status of a scientific and research institute and prepared, for Vodoprivreda, feasibility studies, draft plans and technical documents. Its income came from services provided and charged to Vodoprivreda. Today there are two Institutes: one in RS (based in Bjeljina) and one in FBiH (based in Sarajevo).

In each Entity (RS and FBiH) there is Ministry of Agriculture, Water Management and Forestry. Their role is to prepare necessary legislation and to approve strategy and plans prepared by Vodoprivreda.

There is only one institution at the State level – BIH Environmental Steering Committee (BHESC). It was established recently by the two entities on the initiative of the Office of the High Representative (OHR). The role of the BIHESC is to coordinate activities of the two Entities related to environmental, water protection and water quality aspects.

### **5.2.3 Key Issues**

#### ***Tariffs insufficient for cost recovery***

Tariffs in Bosnia and Herzegovina do not allow for cost recovery and operational subsidies exist in both the water and wastewater sectors. Although this issue has been raised with government authorities, there is a political reluctance to change the current system.

#### ***Long term privatisation***

The government is currently in the process of approving a concession law, which will allow water utilities to be privatised. Tariffs adjustment issues will need to be addressed in order for privatisation to be effective and sustainable.

## **5.3 Bulgaria**

### **5.3.1 General Background**

Like many of the countries in the region, Bulgaria's water and wastewater infrastructure suffers from decades of severe underinvestment. Although Bulgaria has a well-developed water supply system servicing 99% of the population, the system itself is in a very poor condition. Drinking water losses average 52% due to worn-out water pipe network, poor level of control of the water supply system management and measuring volumes of water supplied incorrectly. Several villages (with population less than 200 inhabitants) have no access to piped water. Around 3% of the population connected to drinking water supply systems uses water with dangerously

high levels of nitrates. Oil contamination and serious microbiological contamination affects large communities in the Pleven area, along the lower Maritsa and along the Danube.<sup>3</sup>

The sewerage networks and wastewater treatment are in a similar state and in need of large investments. Only 2.1% of villages and 70% of towns have a functioning sewerage system. In most of the villages, there is no sewerage network and wastewater is discharged using short drains to cesspools and septic tanks. Approximately 17% of the existing sewerage networks need reconstruction given that most of the networks were built between 1960 – 1965 and cannot cope with increased volumes of wastewater. The country's 53 urban waste water treatment plants service just 36% of the population and waste generated by the other 64% is discharged untreated.<sup>4</sup>

A third element of the country's water strategy is focused on improving the quality of surface watercourses and basins. According to the classification criteria for the river water quality used in the report "Europe's Environment: second assessment" (Denmark 1998), more than 25% from the monitoring stations reveal bad or very bad water quality. Only 64% of coastal marine water met the EU directive quality standard for BOD 5) for the period 1992-1998, according to data collected from 26 stations for sampling of marine waters.

### **5.3.2 General Framework/Sector Organisation**

Bulgaria's water strategy is driven by the need to comply with EU environmental standards. In 1999 the Bulgarian Government introduced the Water Act with a view to harmonising national legislation with EU requirements. The main body responsible for the elaboration of environmental policy is the Ministry of Environment and Waters (MOEW), while implementation of its policies is carried out by its regional bodies and the country's 262 municipalities. The MOEW has signalled a number of priorities in order to meet EU environmental standards, including:

- The improvement of the quality of drinking water and implementation of measures for reduction of the water losses along the water supply network;
- The gradual replacement of the worn-out sewerage network, completion of the sewerage networks in the large settlements that are located near sensitive ecosystems;
- Construction of all priority wastewater treatment plants.<sup>5</sup>

The central government will help the municipalities to identify the investment so that these with the highest benefits can be undertaken first. For example, the government has identified 36 priority waste water treatment projects in the national Programme for Priority Construction of Urban WWTP's in order to fulfil the requirements of the Urban Wastewater Treatment Directive. The municipalities are then responsible for the construction, maintenance and operation of urban wastewater treatment plants.

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<sup>3</sup> World Bank. "Bulgaria – the Dual Challenge of Transition and Accession", February 2000.

<sup>4</sup> Bulgarian Ministry of Environment and Water. "National Strategy – Environment Sector", October 2000.

<sup>5</sup> Ibid.

Bulgaria will need to tap a wide variety of sources of funding to pay for these environmental investments. The World Bank estimates that investments in drinking water, nitrate, sewerage and wastewater will amount to over €1.6-3.6 billion regardless of the length of the implementation period.<sup>6</sup> The investments constitute a relatively larger burden in Bulgaria than EU accession countries like Czech Republic or Poland. The World Bank estimates that while other countries will have to invest in the range of 2-8 percent of 1997/98 GDP for overall environmental costs, Bulgaria will need to invest annually between 11-16%<sup>7</sup>. The most important areas for public financing will be drinking water supply, sewerage, wastewater treatment and waste disposal.

Potential financing sources include the National Environment Protection Fund, the national and municipal budgets, ISPA grants and Phare Programmes as well as financing from International Financial Institutions (IFI's). Private investment through the granting of concessions is crucial for improving the quality of the municipal services, particularly in the water supply, sewerage and water treatment. The attraction of foreign investments under hits scheme will be key for the municipalities in order to modernise the existing and construction of new infrastructure.

Implementation of Bulgaria's environmental policy is already progressing with the Sofia water concession, the first water concession in the Bulgaria. The 25-year concession was awarded to International Water and has been successfully operating since October 2000. By implementing €150 million capital expenditure programme and complying with rigorous service targets set out in the concession agreement, the Sofia water supply system will achieve compliance with Bulgarian standards and the provisions of the relevant European Union Directives. A similar effort is currently being conducted in the Black Sea resorts of Varna and Shumen under the auspices of the World Bank.

### **5.3.3 Key Issues**

#### ***Local and National funding constraints***

In the past, the state and municipal budget financed a large percentage of environmental expenditures. Bulgaria public spending on water infrastructure is highly constrained by fiscal limits and high level of poverty. It is seeking transitional periods for the most costly directives such as drinking water and urban wastewater, which will allow it to delay environmental expenditures and redistribute them. The government will need to procure financing from a range of sources in order to meet all the investment needs.

#### ***Institutional strengthening and enforcement***

Improving the capacity of existing agencies at the national, regional and municipal level will be important to enforce the legislation, especially given that some of the burden of the investment will fall on the private sector.

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<sup>6</sup> World Bank. "Bulgaria – the Dual Challenge of Transition and Accession", February 2000.

<sup>7</sup> Ibid.

## **5.4 Croatia**

### **5.4.1 General Background**

As a result past neglect and war, there is a widespread need in Croatia for investments in municipal and environmental infrastructure. In war-affected areas, water supply systems have been badly damaged or destroyed altogether. Most major cities and towns, including Zagreb, do not have facilities for even the basic treatment of municipal wastewater. There is widespread network leakage, increasing the costs of water supply and wastewater treatment and wasting scarce raw water resources. Investments are needed especially along the Adriatic coast to underpin the development of tourism as a main sector of the economy. Marine pollution and poor quality of water services are among the impediments hampering quality tourism there.

### **5.4.2 General Framework/Sector Organisation**

Croatia has a unitary system of public governance with sub-national government organised into two tiers consisting of regional autonomous regions ("*zupanija*") and municipalities. The local tier of government comprises cities and counties.

Local public services, including water supply and sewerage, are local government responsibility and provided mainly by Municipal Public Corporations. Typically these corporations are owned by a major city or a number of municipalities whose areas they serve. Decisions on annual budgets, capital investments and policy matters are taken by the corporations' management boards, which consist of the mayors of the parent municipalities. In a number of cities these corporations have been reformed and incorporated into joint stock companies.

The central government retains overall responsibility for the organisational arrangements and regulation and supervision of the water utility operations. The State Water Administration, via its executive agency Hrvatske Vode, uses a national water use charge to fund investments in water infrastructure, environmental protection, water resource management, water quality and land drainage. As Hrvatske Vode provides a substantial part of capital investment funding it exercises considerable influence over investment identification and approval. The central control over water resources is being justified by the situation of water stress in Croatia, requiring careful allocation and use of relatively scarce water resources. As a result, however, investment decisions tend to be driven more by engineering and technical considerations than by financial and economic feasibility concerns.

Administrative law makes municipalities and municipal public corporations responsible for water and waste treatment services and gives them the right to levy user charges. Investments are funded by service charges (with tariffs set by the elected local councils), municipal surcharges, the local government budget, and other local levies. The reforms permit private sector investment; operating concessions; tariff setting flexibility; and rebates of national surcharges (such as those levied by Hrvatske Vode) to utilities for capital investment or debt servicing.

While local governments have autonomy in their revenue generation and expenditure decisions, the main obstacles they now face are lack of experience with financial management and local funding of municipal infrastructure, and the absence of stable sources of long-term capital financing. Although municipal capital improvement should mainly be financed from user charges and other local sources, in practice, revenue generated by the utilities is insufficient.

The City of Zagreb has recently signed a Concession Contract with the major international private consortium for the Waste Water Treatment Plant (WWTP) on the BoT (Build Operate Transfer) basis. The Zagreb WWTP is the largest plant to be build in the region in the coming years. The Zagreb WWTP demonstrates a new direction in the development of water sector in Croatia as the majority of the large and medium size cities are considering private sector involvement through BoT structures or privatisation of their respective water utility companies.

### **5.4.3 Key Issues**

#### ***Environmental pollution.***

Due to central government budget constraints, few funds have been channelled to environmental investments. Only a small portion of combined municipal and industrial wastewater discharges is treated or treated adequately. Pollution of surface waters and the sea poses severe problems and, in the case of Kaštela Bay has led to eutrophication and the occasional occurrence of red tide. Environmental restoration and protection of the Adriatic seaside are essential for developing Croatia's tourism potential.

#### ***Inadequate funding mechanisms.***

The current reliance on investment funding from national water tariff surcharges is not sustainable. There is a need to move towards cost recovery in service provision and improve municipal access to sources of long-term credit for municipal water services and infrastructure funding.

#### ***Need for improved financial and service performance.***

Utilities need to enhance operational and financial performance to improve cost-effectiveness and increase revenues.

## **5.5 Federal Republic of Yugoslavia**

### **5.5.1 Background**

Over the last decade the Yugoslav infrastructure has deteriorated due to substantial under investment in the replacement and maintenance of assets. In addition migration to larger cities caused the utilities in the major municipalities to operate at the limit of their capacity. Water shortages are experienced during dry periods, urban wastewater

is discharged untreated to the rivers and industrial wastewater receives little or no treatment.

There was little capital investment in the sector during the 1990s. Due to this significant backlog, the entire system is now in need of emergency and short-term investments. In addition, some parts of the water and wastewater infrastructure, particularly in towns such as Novi Sad, have been damaged during the NATO campaign in 1999. The significant need for capital investments in the sector is mirrored by the requirement for major sector re-organisation (decentralisation). Under the Milosevic regime, utility services, including those for water and wastewater were put under direct State (Republic of Serbia) ownership.

The total immediate capital investment need for the three largest cities in Serbia (Belgrade, Novi Sad and Nis), accounting for 25 percent of the population of Yugoslavia, is approximately €70 million. Based on the initial analysis of the three largest cities (Belgrade, Nis, Novi Sad) it is likely that the need for immediate investments in the country range from €150 to 200 million.

### **5.5.2 General Framework/Sector Organisation**

The Federal and Republic governments are in the process of revising the laws on local government. It is necessary for the local government functions to be specified in both a general Local Government Act and in special Acts for each main service area (water, energy, solid waste; etc). It is important that the functions are specified with clarity and thus in reasonable detail, to eliminate any confusion as to the respective responsibilities of Republic and local governments, and thus to provide a clear basis upon which to design an adequate financing framework for local government budgets.

Based on the analysis of the cities of Belgrade, Novi Sad and Nis, there appears (at a broad level) to be an appropriate mix of financing between local budget revenues, assignments of Republic government revenues (giving local governments a portion of the local yield of the taxes levied by the Republic government), and Republic grants (to fill the gap between the yields of the first two sets of revenues, and the expenditure needed to provide services to nationally-affordable standards).

The present standard arrangements for collection of the Republic and local revenues through centralised (Republic) clearing system presents one of the constraints. Collection performance would be improved if the city administration took over collection responsibilities. Nevertheless, the opportunity might be taken in forthcoming new legislation to:

- specify more stringent accountability requirements between central and local governments, and
- provide for the possibility of joint working between central and local governments in the tasks of taxpayer identification and assessment.

### **5.5.3 Sector Issues**

#### ***Legal Framework***

The 1995 Republic of Serbia Property Act, which transferred all public property, to the federal government exacerbates the difficulties of municipal utilities in trying to raise finance. The new government is seeking to address this law to enable municipalities to raise finance.

#### ***Tariffs***

Tariffs historically have been kept at extremely low levels, resulting in chronic under investment, which has been exacerbated by lack of access to finance.

#### ***Damaged Assets***

Municipal water and wastewater utilities have been indirectly affected by property damage during the war, which in some instances, i.e. refinery spills into groundwater, will be expensive to clean up.

## **5.6 Former Yugoslav Republic of Macedonia**

### **5.6.1 Background**

About 65% of the population in FYR Macedonia are provided with water and wastewater services through municipal enterprises for communal services that are owned by municipalities. There are 31 such urban enterprises, with various levels of institutional strengthening needs. The size of the operations of the municipal enterprises is small. Advantages of scale and efficiency could be gained by the creation of inter-communal enterprises like "Proaqua" for Ohrid and Struga or by expanding supply areas within the municipality to nearby municipalities that have no or only limited supply systems.

Although drinking water sources are not polluted, water pollution exists in rivers and groundwater. There are only three wastewater treatment plants in the country (Ohrid, Prespa, and Dorjan). A large part of the surface water pollution can be attributed to the discharge of untreated wastewater into rivers and streams. Raw sewage can be detected in various rivers, including the Dragor River (downstream of Bitola), Vardar River (downstream of Skopje, Veles, and Tetovo), and Orevoecka River (downstream of Prilep).

## 5.6.2 General Framework/Sector Organisation

The legal framework for the water and wastewater sector in FYR of Macedonia is defined by the Constitution of the FYR of Macedonia, as well as by a number of laws and regulations. The most important laws governing the provision of water supply and wastewater services include the following: Law on Water, Law on Raw Minerals, Law on Local Self Government, Law on Communal Activities, Law on Public Enterprises, Law on Obligations, and Law on Protection and Promotion of the Environment and Nature.

The formulation of the sector strategy and the management of implementing it involve predominantly national level organisations. Specifically, the Ministry of Agriculture, Forestry and Water Economy is responsible for the national water resources strategy and management. Although the national water master plan, the 'Water Economy Basis' is supposed to be revised every ten years, the present version, which was introduced in 1974, is currently outdated. A Japanese supported study recently prepared a new draft master plan, which is under discussion. The responsibility to implement the plan is with the Ministry of Urban Planning and Construction.

The responsibility for the provision of water services is with the municipalities, which provide water services directly or through public enterprises. Public enterprises perform the functions of operation and maintenance, renewal of facilities, extensions of the network, billing and collection, and relations with the customers. There are no service contracts between the municipalities and the public enterprises.

Although the municipal enterprises, through their corporatisation, seem autonomous and at arms length, they are in fact fully controlled by the municipalities. The municipality nominates 2/3 of the members of the Managing Board, as well as the Director. This structure of the municipal enterprises can lead to heavy political interference in day to day management.

As part of the reforms undertaken during the transition period in the early 1990s, assets under the control of local public enterprises were registered in the cadaster of 1991 as State property under the control of the national government. Public enterprises established to provide water and wastewater services exercise effective control over the respective assets and, with few exceptions, record them in their balance sheets.

The authority to set tariffs is vested in the public enterprises with consent of the Municipal Council. Furthermore, the government determines the maximum level of tariffs based on the Law on Trade. Water tariffs are thus controlled by the municipalities and the by government which has frozen tariffs for the last 5 years in order to curb inflation, thereby limiting full cost recovery. Because many public enterprises perform a number of other municipal services in addition to water, there is no clear picture of the allocation of financial means to the water sector and partial cross-subsidisation exists.

### **5.6.3 Key Issues**

#### ***Investment needs***

The water supply systems in the urban water companies are old and maintenance has not been adequate. A number of municipalities face water shortages in the summer due to a lack of water resources. In addition, water losses in the system are high and estimates are that 50% of water produced is not accounted for. Funds for investments in the transportation of raw water, construction of major water resources installations (like dams) and network rehabilitation are not available.

#### ***Tariffs***

Tariffs historically have been frozen and were not set to allow for full cost recovery. As a result funding for infrastructure financing is provided by the municipalities or by the State through the Ministry of Urban Planning and Construction. In practice this means that infrastructure investments are under heavy political influence. Funding for water and wastewater infrastructure from the national level is minimal.

#### ***Public Concessions***

Both the municipal services and the infrastructure provision may be performed or used, operated and maintained by a public enterprise under a license or by awarding a concession. However, the law governing concessions does not allow for concessions to be granted for water supply activities. This precludes privatisation within the water sector.

## **5.7 Moldova**

### **5.7.1 Background**

The average age of water distribution networks in Moldova exceeds 25 years. As a result of years of under-investment and a lack of funds for systematic maintenance, water sources have become polluted and ill-maintained wastewater treatment plants are unable to meet water quality standards. Approximately 60% of the water distribution network is worn out, resulting in ongoing breakdowns and water leakages.

Although water supply in larger cities such as Chisinau is generally acceptable, smaller cities are frequently disconnected from the system as a result of energy supply problems, thereby impacting the quality of supplied waters. About 37% of the water supply network in the countryside do not comply with hygienic requirements and are in poor condition. Approximately 2.5 million people in Moldova are supplied underground water, 50-60% of which are subsoil waters, thus making a significant percentage of the population dependant on the quality of subsoil water. The operational reserves of the deeply deposited underground waters is estimated at about 3 million m<sup>3</sup> per 24 hours, only 25% of which could be used for drinking without preliminary treatment. The majority of non-centralised sources and about one-third of centralised system sources does not comply with drinking water standards.

One of the main causes for water pollution in Moldova is insufficiently purified sewage or lack of wastewater treatment. Although wastewater is typically collected in cities with a population in excess of 25,000, in smaller cities it tends to only be collected from central areas. Moreover, only 225 out of 560 wastewater treatment facilities are in working condition. Although wastewater plants are designed for both mechanical and biological treatment, the lack of financial resources combined with power cuts has resulted in a situation where there is only mechanical treatment. In more than 500 localities wastewater treatment facilities do not exist.

### **5.7.2 General Framework/Sector Organisation**

The main legislative framework for the water sector is the 1993 Water Code and the 1999 Law on Potable Water. In addition, the Government approved a National Environmental Action Plan (NEAP) in 1996; for which OECD monitors the implementation. The priority placed on water quality issues, especially water supply and wastewater treatment in urban areas by NEAP has resulted in some improvements in environmental quality improvements through reduced pesticide use and improved water quality, particularly in major rivers, through wastewater treatment investments.

In 1999 the Government of Moldova adopted the Strategy on Modernisation and Development of Communal Water Supply and Sewerage Systems which incorporated the following main objectives:

- to ensure the centralised drinking water supply to all population and economy;
- to ensure water receipt, treatment and distribution in compliance with EU quality standards;
- to ensure that the centralised system for water quality is in compliance with the International Health Organisation requirements;
- to reduce water waste during collection, transportation, distribution and consumption of water.

To meet these objectives, the Strategy envisages the following actions:

- Institutional reform
  - commercialising water utilities;
  - establishing a national agency to co-ordinate activities in the sector;
  - creating a stable institutional framework so as to enhance and facilitate private capital investments; and
  - training staff working in the sector.
- Legal framework
  - revising national legislation to comply with EU standards;
  - ensuring appropriate legislation to support the new institutional structure in the sector; and
  - co-operating with European governmental, economical and scientific agencies and institutions in the area of regulations.
- Operational
  - modernising water supply systems;

- promoting of utilisation of modern materials, technologies and devices based on the international experience;
- enforcing water conservation and energy resources; and
- revising pricing policies to ensure the financial viability of suppliers and tariffs affordable for consumers.

In line with the strategy, the Government of Moldova transferred ownership in the regional state-owned water supply and sewerage companies (apa-canal) to the municipalities in 2000. This restructuring led to formation of municipal sector enterprises. As part of this restructuring, the state share in the joint-stock company Apa-Canal was passed to the municipality of Chisinau.

### **5.7.3 Key Issues**

#### ***Weak financial condition of water utilities***

The utilities no longer receive subsidies from the central government and their revenues are primarily derived from tariffs. At 65%, collection rates are low. Although the utilities are entitled to set tariffs to allow for cost recovery, municipalities are required to approve tariff levels, resulting in political interference. In light of affordability concerns (tariffs currently average 3.5% of household income) there has been a reluctance to increase tariffs, resulting in cash shortfalls, which has prevented routine maintenance and new investment.

#### ***Institutional Development***

Municipalities and local authorities lack the funds and staff to restore and rehabilitate existing systems to conform with environmental and safety requirements. Corporatisation and sound financial management, including proper regulation of the sector, also remain unresolved.

#### ***Investment Priorities***

Moldova's investment needs include developing drinking water supply to ensure coverage for the entire country, modernising the water supply system and developing waste water systems. In light of affordability issues, it is anticipated that grant financing will be needed to assist the country in meeting its investment needs in the sector.

## **5.8 Romania**

### **5.8.1 Background**

The Romanian water sector is characterised by poor quality drinking water, low connection rates to sewage treatment plants and extensive underground water pollution, which has negatively impacted the Black Sea and the Danube River. As a result of chronic under-investment in ongoing maintenance, utilities have inefficient

equipment resulting in interrupted supply, poor water and waste water effluent quality, high levels of leakage and unaccounted for water and high levels of infiltration into the waste water collection network

In addition, only 51.1% of households are connected to sewerage systems and have access to drinking water. This situation is much worse in rural communities, where the percentage connected is 11.2%. Although the National Plan for the Environment, passed by the government in 1995 and updated in 1999, has put in place measures to remedy this situation, significant investment will be needed both in urban and rural areas to enable Romania to be in compliance with the Acquis Communautaire. The Romanian government estimates that until 2030 investments of approximately €4.5 billion in urban areas and €6 billion in rural areas will be required to meet EU standards.<sup>8</sup>

The goals for the Romanian water sector are based on compliance with the Acquis Communautaire. Set forth in the National Plan for Environment – ISPA (NPE – ISPA), they include the following:

- Investments leading to the provision of drinking water that is compliant with a number of water related directives such as 98/63/EC;
- Investments leading to the management of wastewater in all agglomerations with a population equivalent of more than 100,000 in accordance with the requirements of Directive 91/271/EEC;
- Investments leading to the management of wastewater in 50% of all agglomerations with a population equivalent of 10,000 to 100,000 in accordance with the requirements of Directive 91/271/EEC; and
- Protection of the most important water bodies against eutrophication.

In addition, the most essential targets for environmental compliance are include:

- Eliminating health risks of providing drinking water unfit for human consumption through the development of drinking water treatment plants that produce drinking water in compliance with EU quality standards;
- Protecting key water bodies (the Black Sea, The Danube River and all of its tributaries) from pollution from discharges of untreated sewage and industrial wastewater by developing wastewater treatment plants to treat wastes to acceptable effluent quality standards;
- Improving sewerage infrastructure to contain and control sewage flows and to reduce leakage from sewers and uncontrolled overflows, which would otherwise damage ground and surface water sources; and
- Providing long-term and environmentally acceptable sludge disposal facilities.

### **5.8.2 General Framework/Sector Organisation**

Although national laws set the overall policy for the water sector, water and wastewater services in Romania fall under the jurisdiction of municipalities and counties. The Law on Local Public Finance (Law 189/1998) and recently enacted

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<sup>8</sup> The Government's Strategy concerning the development of local public services, Ministry of Public Administration, Bucharest - 2001

Law on Municipal Services (Law 326/28.06.01) are particularly relevant to the water sector. The first law, which fundamentally alters the structure of local finance, gave municipalities and counties increased fiscal autonomy. Becoming independent from the state budget contributions has provided these entities with a basis to plan and manage their revenues and expenditures on a more consistent and predictable approach. The new law on Municipal Services establishes the rules on the rights and obligations for parties involved in municipal services. The law provides incentives for private sector investment in infrastructure and provides the utilities with more power to reduce outstanding debts with existing customers.

Romanian water utilities are organised as regii autonome ("regii"), which are public entities that are owned either by the municipalities or by the counties, depending on the service area. The regii operate independently and have their own budgets. The infrastructure assets are owned by the local government and administered by the utilities. The municipality or the county appoints the board of administration of the water utility. The management team concludes a management contract with the municipality or the county, stipulating the type and level of services to be provided by the water utility. Although increased fiscal autonomy has highlighted the need to enhance operational efficiency and to introduce cost saving mechanisms at water utilities, institutional strengthening is still needed.

Tariffs are set at the local level, but certified with the Office of Competition, a national entity. Tariff adjustments for inflation are in principle allowed automatically, but when the rate exceeds 5%, the approval of both municipal councils and Office of Competition is required.

### **5.8.3 Key Issues**

#### ***Investment Needs***

Romania needs urgent investments to rehabilitate existing water networks to reduce losses and to prevent groundwater intrusion in sewage systems. Investment is also required to improve the operating efficiency of water and sewerage networks through system reconfiguration, network and consumer metering, replacement of energy-inefficient pumping plant, and the establishment of billing and revenue administration and financial and management information systems.

#### ***Tariffs***

Inadequate funding mechanisms is one of the key reasons for ongoing underinvestment and chronic under-expenditure on maintenance, thereby impeding water quality. There is an urgent need to move towards cost recovery and to introduce credit into the system through which municipal water services and infrastructure are financed.

#### ***Lack of financial discipline in investment decisions.***

Local authorities continue to favor new development or extensions over ongoing rehabilitation and improvement of existing facilities. In general, investment

identification and approval need to become budget-driven rather than engineering-driven, as has been the case up to now.

***Over - consumption***

In the absence of demand management by way of economically efficient pricing and effective metering, there is considerable over-consumption of services. This situation is compounded by widespread leakage in the water distribution networks. Due to leakage and low prices, water consumption is two or three times the level found in Western Europe.

***Inefficiency and low productivity***

Water utilities need to improve operational and financial performance so that they can provide services in a cost-effective way and are in a position to gradually increase revenues in real terms.

## **6. TYPICAL PROJECT EXAMPLES IN THE REGION**

The following examples represent different types of water projects and approaches that are being implemented in the region.

### **6.1 Municipal and Environmental Action Programme (FYR of Macedonia)**

The project aims to achieve compliance with the National Environmental Action Plan endorsed by the Macedonian Government in 1997, through a priority Municipal and Environmental Action Programme (“MEAP”) targeting urgent investment needs in the water and wastewater sector in five municipal water utilities in the FYR Macedonia. The municipalities covered by the Programme are Kumanovo, Ohrid/Struga, Stip, Strumica and Veles. The operation is a quick start project under the Stability Pact, which was instrumental in raising grant/concessional loan co-financing of €31.8 million for investments and technical co-operation. Currently under implementation, the will entail an investment programme for water and wastewater infrastructure to:

- Improve the quality and reliability of water supply;
- Reduce health hazards and pollution of surface water from discharging untreated wastewater;
- Introduce cost recovery in the provision of municipal services;
- Strengthen the financial and operational performance of the water utilities involved; and
- Foster private sector involvement in contracting and construction management.

### **6.2 Rijeka Sewerage Services Improvement Programme (Croatia)**

The Rijeka Sewerages Services Improvement Programme is another Stability Pact quick start project. This project entails the design and construction of collector and pump stations. The City of Rijeka guarantees long term financing for the project.

The primary objectives of the project are as follows:

- Collect and transport all wastewater generated in the Kantrida area to the Delta Wastewater Treatment Plant in order to prevent: (i) pollution of the Adriatic Sea in front of the Kantrida neighbourhood; (ii) remove an ongoing health hazard from the discharge of raw sewerage near homes and businesses; and, (iii) improve the attractiveness of nearby beach resorts to tourists.
- Help the City of Rijeka prepare and implement a Municipal Credit Enhancement Programme to improve its operational standards and financial performance by gradually introducing modern best practices into its management system.
- Help the Rijeka Water and Sewerage Company to implement a financial and operational performance improvement programme to improve its technical, environmental and financial performance.

The project is currently under implementation.

### **6.3 Municipal Environmental Investment Programme MEIP (Croatia)**

The borrower of the Bank's loan is *Hrvatska Banka za Obnovu i Razvitak* (HBOR – Croatian Bank for Reconstruction and Development), a stated-owned bank created to provide long-term loans to private and public borrowers for investments in housing and physical and economic infrastructure. The borrower lends on the loan proceeds to selected municipal water utilities in five towns on the Adriatic coast. 1996.

The operation has the following main objectives:

- Reduce pollution of the Kaštela Bay, and the sea off Pula;
- Improve the quality of water supply in the towns of Split, Solin, Trogir and Kaštela;
- Set a model for a viable system of credit financing of municipal infrastructure investment by developing HBOR's capacity to appraise and manage municipal loans;
- Enhance the operational and financial performance of the water utilities involved;
- Lay the groundwork for possible private sector involvement in municipal services.

The loan proceeds finance the extension and improvement of sewerage, wastewater treatment and water supply systems in Trogir, Kaštela, Split, Solin, and Pula and the establishment of wastewater monitoring in the Brac and Split channels.

Financed by EBRD and the World Bank in 1996, the project is under advanced implementation.

### **6.4 Municipal Environmental Loan Facility MELF (Romania)**

In the mid-1990's EBRD provided two sovereign/sovereign-guaranteed loans for the water sector in Romania, with an objective to improve the financial and operational performance of the utilities. Building on successful implementation of these projects in the water sector, MELF, which was signed in 2000, is an example of ongoing transition in the water sector in Romania for decentralised municipal finance. Designed as a framework to provide co-financing to EU-ISPA grant funds for investments in water, wastewater and solid waste management sectors, the MELF loan will be secured by city and county, rather than sovereign guarantees.

Constanta is one of the subprojects for the facility. For the past several years, RAJAC, the local water utility, has been implementing a comprehensive programme of real term tariff increases and inflation adjustments together with a broad range of measures to improve its operational and financial performance. As a result of these measures, Constanta was included in the EU ISPA programme and received ISPA financing to modernise wastewater pumping stations and treatment plants, which will be complemented by EBRD and local financing. Upon completion of the project, Constanta will be in compliance with European Union effluent standards, which will bring about a significant improvement in the water quality and marine life of the Black Sea.

## **6.5 Sofijska Voda**

Sofijska Voda is a joint stock company, which will operate the city of Sofia's water and wastewater system. The project concludes several years of work by the city of Sofia to successfully bring much needed new investment into the city's water and wastewater system. In addition to financing these improvements outside of the City's budget, the project will also result in efficiency gains and improved services.

The deal, which is the first of its kind in the region, will have an important demonstration effect in bringing in private investment into the water sector. The investors are a consortium, which includes International Water Limited (UK), Bechtel Enterprises Holding, United Utilities Plc and the City. Signed in 2000, the project has the following objectives:

- Fair and transparent selection process implemented for the selection of the concessionaire
- Investment programme to renew and upgrade system assets
- Demonstration for the region of a public private partnership for the delivery of water services