

Annex 1. General Information on B&H (geographical position, administrative set-up and hydro-geological characteristics)

Bosnia and Herzegovina is located in the western part of the Balkan Peninsula in south east Europe. This present politico-administrative structure was established under the Dayton Peace Accords (1995) which brought the civil war (1992-95) to an end. Under these Accords several subsidiary political and administrative structures were created, the most important being the division of the country into two entities: the Republic of Srpska (RS) and the Federation of Bosnia and Herzegovina (FB&H). The FB&H covers 51% of the total area of B&H, while the RS covers 49%. The Brčko district in the north of the country was created in 2000 out of the land from both entities. It officially belongs to the both, but it is governed by neither, and functions under a decentralized system of the local government. The two Entities are asymmetrical in their institutional organization. The FB&H is composed of 10 Cantons (every Canton has its own Government and Constitution) subdivided into 84 municipalities, whereas RS comprises 63 municipalities, without cantons.

For the most part, B&H has a continental climate, except its southern part of the country where a Mediterranean climate prevails. In the east of Herzegovina rainfall is amongst the highest in Europe. In terms of hydrology, B&H encompasses two river basins: the Sava River (Danube) in the north, and the Adriatic Sea basin covering the southern half of the country. Of the total area of B&H (51,129 km²) 75.7% belongs to the Danube (38,719 km²), while 24.3% belongs to the Adriatic Sea basin (12,410 km²). The hydrological border between the two basins straddles the border between the FB&H and the RS, so that the FB&H and RS water administrations' are each responsible for water management in different parts of both the Sava and Adriatic Basins. Topographically, more than 75% of country lies less than 1500 meters above sea level.

Annex 2. Water Consumption by Inhabitants and Industry in B&H

The biggest cities in the FB&H account for 61% of total water consumption of the entity. Sarajevo consumes 36%, Mostar (10%), Tuzla 9%, and Zenica (6%)¹. Water consumption by industry in the FB&H is very significant. Part of the industrial water demand is met by drinking water from the water utilities, but the biggest industrial consumers typically also have their own water supply sources. Today, industrial technologies are working towards reducing consumption of all resources used during production, and introducing water recycling wherever possible, as they are obliged to pay fees for water abstraction and wastewater discharge. The total water quantity used by industry in the FB&H from their own water sources amounts to $59,147,70 \times 10^3 \text{ m}^3$; a mere 17% of pre-war consumption². Table A1 displays water abstraction self-supplied by industries in each river basin.

Table A1: Abstracted Water Quantities Self-supplied by Industry

Basin/sub-basin	Annual water quantities abstracted In 10^3 m^3
Vrbas	10,2
Una	0,135
Bosna	58.404
Drina	32,5
Sava	59
Neretva	641,87
Cetina	-
Total	59.147,70

In the FB&H, agricultural land covers 1,136,730ha (43.5%), of which 718,400ha is arable. It is predicted the total area in need of irrigation comprises 80,800ha (11.2%) of total arable land, but present estimates suggest only 1,612ha (0.2%) of arable land is irrigated in reality³.

In the RS, the five biggest cities account for 50% of total water consumption; Banja Luka (25%), Bijeljina (10%), Prijedor (7%), Dobož (4%) and Zvornik (4%) respectively. As in FB&H, a small amount of the industrial water demand (18million m^3) is covered by drinking water from water utilities, whilst most is derived from their own sources (150 million m^3 per annum). Small quantities of water are used for irrigation.

In B&H there is a large system for hydro-energy utilisation named HET (Hydro power plants on the Trebišnjica river). There are 4 hydro power plants - three situated in B&H and one in Croatia, which have a capacity of 820MW, and there are plans for new hydropower plants in an aim to gain additional 200 MW.

¹ MAFWM (2009) Draft Federal Strategy for Water Management.

² MAFWM (2009), Draft Federal Strategy for Water Management.

³ MAFWM (2009), Draft Federal Strategy for Water Management.

Annex 3. Strategic Documents in B&H

Entity Strategies for Water Management

According to the entity Laws on Water, there is an obligation for each entity to produce their own Water Management Strategies, which is the first step towards creating River Basin Management Plans. The Strategies determine the water management policies in B&H, and have the following objectives:

- Reducing pollution, prevention of degradation and achievement of good water status;
- Improving sustainable water use;
- Ensuring equitable access to water;
- Fostering social and economic growth;
- Ecosystem protection;
- Reducing the risk from floods and other negative effects of water;
- Ensuring public participation in decision making related to water,
- Preventing and solving conflicts related to water protection and water use; and
- Fulfilment of the responsibilities from international contracts which are binding for B&H.

The FB&H commenced the creation of its Water Management Strategy in December 2007, and the first draft of this document is available. Among other issues, the Strategy specifically estimates the water quantities abstracted and delivered to consumers; the population connected to public water supply; changing trends in water consumption; and the implementation and efficiency of measures for reducing losses and for measuring water quality and quantity. According to the first draft, objectives and proposed activities for the future development of water sector include:

- Rationalization of water consumption;
- Bigger investments for gradual reduction of water losses;
- Awareness raising on the significance and the necessity of rational water use.

Following the final version of the strategy, the FB&H will produce its RBMP, scheduled for completion in 2012.

In 2006, as a step towards the Water Management Strategy (the production of which has not yet commenced), RS created its Framework Plan for the Development of Water Management in the RS. The basic objectives of this Framework Plan are to serve as a starting point towards the creation of the Water Management Strategy and Development Strategy of the RS, and to serve as a ground for defining spatial needs for the development of water infrastructure. The Framework Plan defines criteria, conditions and limitations for future development of water infrastructure and water sector management in general.

According to the plan, current water losses in water supply systems are approximately 50%. One of the strategic objectives for the future development, defined in the document is “improvement of water use efficiency and rational water use”. Further objectives in the plan include, inter alia:

- Increasing the population covered by the public water supply system;
- Improving the level of water services;
- Radically decreasing water losses from 50% to 20%;
- Reducing specific water demand to the level of 160 l/inhabitant/day; and
- Ensuring water systems can finance their own investments and cover all operation and maintenance costs.

There are no indications of deadlines for achieving these objectives however, and it is unknown when production of the Water Management Strategy for RS will commence. The River Basin Management Plans are scheduled for completion in 2015.

National Environmental Action Plan (NEAP)

B&H created their National Environmental Action Plan (NEAP) in 2003. The aim of this Plan was the identification of short and long-term priority actions and measures providing the basis for preparation of a long-term environmental protection strategy in accordance with the economic, political and social situation in Bosnia and Herzegovina. The plan reviews the state of the environment in eight key sectors and proposes measures to address the crucial environmental problems, and defines institutional and technical requirements for implementation, updating and supervision of the NEAP.

Water was identified as a key environmental issue in the NEAP. Based on an analysis of the current situation in all fields of environmental protection, it was concluded that water resources and wastewater should be the first priority of the NEAP. The priorities for water supply are two-fold:

1. Implementing long-term water supply projects in the most endangered regions in B&H;
2. Identifying and minimizing water losses in water supply systems where losses are up to 60 %.

Priorities for wastewater treatment and construction of sewage systems are similarly two-fold:

1. Designing projects for construction of new, and rehabilitation of existing, wastewater treatment plants;
2. Construction and rehabilitation of sewerage systems in endangered regions of B&H.

One of the main recommendations in the NEAP for improving the water sector is the production of strategies, studies and models for water management, and the introduction of a water information system.

Mid-Term Development Strategy B&H (Poverty Reduction Strategy Paper)

The MTDS for B&H was produced in 2003, and applied to the period 2004-2007, to provide framework guidelines for the development of the country by sector. The Strategy was created at a time when B&H needed development in all economic sectors, and so the Action Plan of the Strategy has identified a large number of measures for implementation, but without completed list of priorities within the sectors. This Strategy was revised in 2006 in order to update the document and to adjust the priority measures to the present situation, considering that much has changed and improved in the country since the Strategy has originally created.

The objectives of the strategy in terms of water management are;

- To improve the legal and institutional framework;
- To adopt relevant legislation, and harmonize the Water Law with the WFD (already accomplished by adoption of the new Water Laws);
- To set up adequate institutional organization of the water sector, in accordance with the EU WFD; and
- To establish sustainable financing system.

The main recommendations for the water sector are;

- For water management to be organized at the river basin level;
- To improve existing infrastructure;
- To improve existing flood protection system;
- To provide sufficient water for water supply;
- To improve water quality protection; and
- To improve integrated and inter-sector planning of water resources exploitation.

Specifically, in terms of water management, one of the priority measures defined in the Mid-Term Development Strategy is to “physically repair and organizationally strengthen water supply systems”, which includes the following:

- Ensuring adequate supply of safe water to towns and cities;
- Reducing the losses in water supply systems by 10% (from their present 50%);
- Reducing the number of inhabitants not connected to water supply systems by 1/3;
- Improving revenue collection systems for water supply and sewage services, and passing regulations to legalize illegal connections and local water supply systems to ensure commercial sustainability of the system;
- Protecting all existing and potential sources of potable water, specifically those in rural areas; and
- Improving and monitoring the quality of water used by rural populations.

With regards agricultural water use, the Strategy suggests “improving irrigation systems”, and emphasises the need to “provide sufficient water quantities for irrigation of arable land, thus creating conditions for intensive agricultural production”, but it elaborates no further.

Annex 4. International Aid - Water Programmes and Projects in B&H

The EU has provided much assistance to water management in Bosnia and Herzegovina in the past. The main focus has been on institutional strengthening of the water sector at the national level. Projects have targeted legal, financial, institutional aspects of the water sector, as well as water quality and human capacity building. Significant water supply and sanitation projects have also been implemented by UNDP, EBRD, Swedish SIDA, and Swiss IBG (in north-western Bosnia). In addition, municipalities have started to use funds (credits) from “local development agencies”.

The “Assistance to Water Utilities in B&H” Programme was one of a series of USAID-funded programs for water utility strengthening that began in 1999, when USAID Sarajevo commissioned a study to assess the needs for the reform of the water sector. The objective of that particular assessment was to examine the water problems at the local level in order to strengthen the capability of these water utilities to provide satisfactory water and wastewater services to their customers in a business-like manner, i.e., to become efficient and financially self-sustaining. The first phase of the programme included a detailed field diagnosis of conditions in ten selected water utilities that were deemed representative. Recommendations arose from that study to address the legislative, technical and financial weakness in the water and wastewater utilities of B&H. The second phase started in March 2002, under the project title “Assistance to Water Utilities in B&H - Pilot Water Utilities Doboj, Orašje, Konjic, and Tuzla”. The overall objective of this project was to strengthen the institutional and financial sustainability and operational efficiency of selected water utilities, to make them self-sustainable public companies and to qualify them for commercial credits from the World Bank and/or other lenders.

In addition, USAID implemented a programme from March-July 2001 focusing on improving water utilities’ accounting, budgeting and reporting. They have also implemented a project entitled “Unaccounted for water reduction and water demand management training”, the objective of which was to provide skills and knowledge to participants to enable them to develop Water Demand Management and Unaccounted for Water (UFW) Reduction Programs for their own utilities. This was accomplished by providing technical know-how transfer to participants, as well as explaining the role of government and/or local authorities in demand and reduction management. The target for B&H’s water utilities was to reach a UFW level of 30%, which is believed to be reasonable and achievable in the near future.

Annex 5. Acronyms

AfWoASB FB&H	Agency for Water of the Adriatic Sea Basin of the Federation of Bosnia and Herzegovina
AVP	AVP Sava
B&H	Bosnia and Herzegovina
CESC	The Committee on Economic, Social and Cultural Rights
DIKTAS	Dinaric Karst Aquifer System Project
EBRD	European Bank for Reconstruction and Development
EU	The European Union
FB&H	The Federation of Bosnia and Herzegovina
FPDWM RS	Framework Plan for the Development of Water Management in the Republic of Srpska
FSI	Federal Statistic Institute
GEF	Global Environmental Facility
HCHR	Helsinki Committee for Human Rights (NGO)
HRBA	Human Rights Based Approach
ICPDR	International Commission for the Protection of the Danube River
IDMC	Internal Displacement Monitoring Centre
IDPs	Internally Displaced Persons
ISoW	Information System of Water
IWM FB&H	Institute for Water Management for the Republic of Srpska
IWM RS	Institute for Water Management for the Federation of Bosnia and Herzegovina
IWRM	Integrated Water Resources Management
JMP	WHO/UNICEF Joint Monitoring Programme
MDGs	Millennium Development Goals
MoFTER	The Ministry of Foreign Trade and Economic Relations
MoHRR	The Ministry for Human Rights and Refugees
MAFWMFB&H	FB&H Entity Ministry of Agriculture, Forestry and Water Management
MAFWMRS	RS Entity Ministry of Agriculture, Forestry and Water Management
MTDS	Mid-Term Development Strategy
MWA	Mostar Water Agency

NDS	National Development Strategy
NEAP	National Action Plan
NGO	Non-governmental organisation
ODA	Overseas Development Assistance
PE	Population Equivalent
RAfWSRB FB&H	Republic Agency for Water of the Sava Basin in Federation of Bosnia and Herzegovina
RAfWSRB RS	Republic Agency for Water of the Sava Basin in Federation of Republic of Srpska
RBMP	River Basin Management Plan
RMAP	Rights Based Municipal Development Programme
RS	The Republic of Srpska
SIDA	The Swedish International Development Agency
SNV	SNV Netherlands Development Organisation
UN	United Nations
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WHO	World Health Organisation
WFD	European Union Water Framework Directive (2000/60/EC)
WQM	Water Quality Management
WTW	Women To Women (NGO)

Annex 6. List of Persons Met

AfWoASB FB&H	Damir Mrden, Director
AVP	Mirza Bezdrob
HCHR	Branimir Jelic
IWMFB&H	Faruk Šabeta, Director
IWMRS	Uroš Hrkalo, Director
MoAFWM	Mr Damir Ljubić, Minister; Hazima Hadžović, Assistant of Ministry for Water Management
MoAFWMRS	Dr Radivoje Bratić, Minister; Mihajlo Stevanović, Assistant of Minister for water management
MoFTER	Mladen Zirojević, Minister; Brankica Pandurević, Head of Department for Water Resources and Tourism; Eres Sperovic;
MOHRR	Saliha Duderija, Assistant Minister
Ombudsman	Jasminka Dzumhur, Ombudsman
RAfWSRB FB&H	Sejad Delić, Director
RAfWSRB RS	Mr Branislav Blagojević, Director
SNV	Aleksandra Ploco, Advisor
UNDP	Christine McNab, UNDP Resident Representative and UN Resident Coordinator; Christian Hainzl, Project Manager RMAP; Igor Palandzic, National Environmental Officer
USAID	Diana Swain, Acting Mission Director; Sandra Stajka Desk Officer
WTW	Berina Mehelic

Annex 7. References

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