



Protection and Sustainable Use of the Dinaric Karst Transboundary Aquifer System

Country Report Bosnia and Herzegovina

LEGAL AND INSTITUTIONAL FRAMEWORK AND POLICY

Update 2013



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TABLE OF CONTENT

I.	LEGAL AND INSTITUTIONAL FRAMEWORK AND POLICY	3
1	NATIONAL LEGAL AND REGULATORY SETTING (WATER POLICY, WATER LAW AND INSTITUTIONS).....	3
1.1.	Overview on institutions involved in the management of water resources	3
1.1.1.	B&H's Governmental Structure	3
1.1.2.	Relevant Institutions in Federation of B&H (entity Level)	3
1.1.3.	Relevant Institutions in Federation of B&H at Cantonal level	6
1.1.4.	Relevant Institutions in Federation of B&H at Municipal or Cantonal level	6
1.1.5.	Relevant Institutions in Republic of Srpska (entity level)	7
1.1.6.	Relevant Institutions in RS at Municipal level	9
1.1.7.	Inter – Entity Environmental Body	9
1.1.8.	Relevant Government departments in Brčko District	9
1.1.9.	Communal Utility of Brcko District	10
1.2.	Overview on legal and regulatory frameworks for water	10
1.2.1.	General remarks	10
1.2.2.	Relevant legislation and regulation in Federation of B&H	11
1.2.3.	Relevant legislation and regulations in Republic of Srpska	14
1.2.4.	Relevant legislation and regulation in District Brcko	16
1.2.5.	Socio economic incentives and obstacles to effective groundwater management	17
1.3.	Known gaps in the policy and legal framework	23
1.4.	State of Law enforcement.....	25
1.5.	On-going and planned activities to improve/update the current legal and regulatory framework.....	26
1.6.	Link to implementation of EU Water Framework Directive	27
2	INTERNATIONAL COOPERATION (BILATERAL, REGIONAL, INTERNATIONAL)...	28
2.1.	Existing bilateral and regional agreements	28
2.2.	Perceived transboundary issues of concern.....	29
2.3	Completed, on-going and planned international, bilateral or multilateral activities	30
2.4.	Main achievements and obstacles and lessons learned.....	31
3	QUESTIONNAIRE ON IMPLEMENTATION OF THE GROUNDWATER MANAGEMENT ISSUES INTO NATIONAL (B&H) LEGAL AND POLICY FRAMEWORK.	32
4	NATIONAL (B&H) SWOT ANALYSE	41

I. LEGAL AND INSTITUTIONAL FRAMEWORK AND POLICY

1 NATIONAL LEGAL AND REGULATORY SETTING (WATER POLICY, WATER LAW AND INSTITUTIONS)

1.1. Overview on institutions involved in the management of water resources

1.1.1. B&H's Governmental Structure

The Constitution of Bosnia and Herzegovina (BiH) is an integral part of the Dayton Peace agreement, which has created a very specific State comprising of two Entities, the Federation of Bosnia and Herzegovina (FB&H) and the Republic of Srpska (RS) and Brcko District (BD). The State of BiH is the central authority, but has only limited and specific powers, whereas the two Entities and the Brcko District are politically, administratively and legally largely autonomous. Accordingly, environment and water sector are under responsibility of both B&H entities, and of Brčko District, and only some responsibilities belong to state of B&H.

However, by passing the Law on Ministries and other bodies of administrations of Bosnia and Herzegovina (Official Gazette of B&H, No. 5/03), the State Ministry of Foreign Trade and Economic Relations (MoFTER), receives the authority to deal with the issues of environmental protection and natural resources at the state level. This Ministry is also responsible for implementation of international treaties in environmental field.

Law on Council of Ministries B&H (Official Gazette of B&H, No 30/03, 81/06, 76/07 81/07 and 24/08) prescribes conditions for establishment of the administration at the state level, in accordance with the B&H Constitution.

At the level of the entities, ministries are established in accordance with Law on Ministries of F B&H and other bodies of Federal administration (Official Gazette of F B&H, No 58/02, 19/03, 38/05, 2/06, 8/06, 61/06 and 48/11) and Law on Ministries of RS (Official Gazette of RS, No 70/02, 33/04, 118/05 and 33/06). Both of entities have established 16 ministries.

The primary responsibility for water resources belongs to Federal Ministry for Water, Agriculture and Forestry in F B&H and Ministry for Agriculture, Water and Forestry in RS. Federal Ministry for Environment and Tourism in FB&H, and Ministry for Urban Planning, Civil Constructing and Ecology in RS have responsibilities for different environmental issues, including some aspects of water, such as protection of water resources, through EIA procedures, issuing integral environmental permits etc.

1.1.2. Relevant Institutions in Federation of B&H (entity Level)

▪ Federal Ministry of Agriculture, Water Management and Forestry

In Federation of Bosnia and Herzegovina the principal role for the water sector is assigned to Federal Ministry of Agriculture, Water Management and Forestry, which is responsible for and water policy development, issuing agreements, setting of standards and regulations; and the maintaining of compliance with Laws and regulations through licensing and inspections.

Federal Ministry of Agriculture, Water Management and Forestry perform administrative and professional tasks related to:

- water management plans;
- water abstraction and usage of water;
- ensuring water for water supply needs of the population and industry;

- **Federal Ministry of Environment and Tourism**

According to the Law on Federal Ministries and other bodies of Federal administration (Official Gazette of F B&H, No. 58/02, 19/03, 38/05, 2/06, 8/06, 61/06 and 48/11), Federal Ministry of Environment and Tourism performs administrative, professional and other tasks from jurisdiction of F B&H, which relates to:

- ecological protection of the air, water and soil;
- development of the environmental protection strategy and policy;
- air, water and soil quality standards;
- ecological monitoring and control of air, water and soil;
- development of tourism policy and strategy;
- follow up on touristic trends at domestic and foreign market;
- mapping the long-term development of tourism in the framework of an integrated economic system and other tasks stipulated by law.

- **Federal Ministry of Energy, Mining and Industry**

According to the Law on Federal Ministries and other bodies of Federal administration (Official Gazette of F B&H, No. 58/02, 19/03, 38/05, 2/06, 8/06, 61/06 and 48/11), Ministry of Energy Mining and industry performs administrative and professional tasks under jurisdiction of Federation and related to: energy, mining and industry, geological researches and hydro-geological investigations of groundwater, creation of energetic policy and geological researches, inspection monitoring over exploitation of mineral raw materials and other tasks determined by relevant Law.

- **Federal Ministry of Health**

The main water-related functions and tasks of this ministry are:

- safeguarding of the quality of potable water by co-ordination of expertise for development of relevant legislation, regulations and standards;
- organizing water quality monitoring.

- **Federal Agency for "Watershed Area of the Sava river Basin" (located in Sarajevo town) and Federal Agency for "Watershed Area of Adriatic Sea Basin" (located in Mostar town)**

Water Agencies were established under the FB&H Law on Water («Official Gazette of FB&H», No. 70/06), adopted on 20. 11. 2006. year, in order to implement the water management tasks, which were put under their jurisdiction by this Law and regulations.

Their main Agencies' responsibilities are as following:

- preparation of analysis of the characteristics of water areas;
- preparing of an overview of the influence of human activities on the condition of surface and underground water;
- preparation of economic analysis of water usage;
- establishing a register of protected areas (under Article 65. of above mentioned Law on Water), as well as areas with special protection determined by the decision of the federal government;
- establishing an register of water bodies, that are used or planned to be used for water abstraction for human consumption;
- organization of classification of ecological, chemical and quantitative water status;
- preparation of water monitoring program and organization relevant activities;
- preparation of water management plans and programs of measures.

- **Federal hydro-meteorological institute**

Federal hydro-meteorological Institute performs expert and other activities that are under the jurisdiction of Federation B&H, according to the Law on Ministries of F B&H

System

and other bodies of Federal administration (Official Gazette of F B&H, 58/02, 19/03, 38/05, 2/06, 8/06, 61/06 and 48/11)

Basic programs' activities related to water are:

- development and undertaking of meteorological, air-meteorological, hydrological and seismic and environment quality activities; researching the atmosphere, water resources, the quality of the environment (air, water and soil) and seismic processes;
- collecting, processing and publishing data from the activity filed that is of interest for Federation as well as performance of other tasks in the fields of meteorology, air-meteorology, hydrology, life environment quality and seismology.

According to Law on Water («Official Gazette of FB&H», No. 70/06), Federal meteorological Institute is responsible to establish a system for monitoring and prognosis of meteorological emergencies and deliver such prognosis regularly to water information system (WIS).

▪ **Federal geological Institute**

Federal geological Institute is established according to the Law on Ministries of F B&H and other bodies of Federal administration (Official Gazette of F B&H, No. 58/02, 19/03, 38/05, 2/06, 8/06, 61/06 and 48/11).

Basic programs' activities related to water are:

- participation in preparation of laws and bylaws from the field of hydro-geological researches;
- managing groundwater cadastre;
- research of groundwater (drinking, mineral, thermo-mineral and thermal);
- participation in preparation of the proposals, for Federal Government, of hydro-geological maps for development of the water-supply;
- performing of hydro-geological researches in the field of drinking, thermal, thermo-mineral and mineral groundwater;
- performing hydro-geological research in the field of geothermal energy, scientific-expert education of the employees in the sector;
- improvement and introduction of contemporary methods in the field of hydro-geological research;
- preparation of the studies on amounts and quality of all groundwater;
- establishing of cooperation with other federal bodies which deals with water supply problems and ground waters protection;
- preparation of studies on water protection and providing a propositions for storage of dangerous and toxic materials in underground; preparation of the drafts of mid-term and annual working programs.

▪ **Public Health Institute F B&H**

Public Health Institute of F B&H is the public health institution performing the public health activities at the territory of F B&H (Law on Health Care – «Official Gazette of FB&H», No. 46/10).

It was established by the Parliament F B&H, as the institution of key importance for performing the secondary and tertiary public health services.

Description of work (relating to environment):

- monitoring of environmental and health risk factors;
- compiling of all Cantonal' health institutions activities;
- providing technical assistance in health and other legislation creation;
- investigations, analysis and assessment of environmental impact;
- planning and undertaking measures for health protection against harmful impact of environmental pollution;

- planning and carrying out measures for maintaining and improving health of the population;
- co-operation with relevant international organizations.
- **Federal Authority for inspection affairs**

Federal Authority is independent federal body that is responsible to the Government of Federation. It was established in 2006. year and started to work officially in 2007. This Authority is established based on the Federal Law on inspections (Official Gazette F B&H, No. 69/05). Federal Authority consists of 15 organisational units, out of which are 10 Inspectorates. Among 10 Inspectorates are: Watermanagement Inspectorate; Agriculture Inspectorate; Forestry Inspectorate, Sanitary-helt – pharmaceutical Inspectorat, Urbanity-ecological Inspectorate e.t.c.

Environmental Fund

Law on Fund for Environmental Protection (“Official Gazette of FB&H”, No. 33/03), establishes the Fund for Environmental protection of F B&H, defines organization, management and operation of the Fund, defines property and business functions of the Fund, defines purpose and usage of Funds’ resources, and regulates other issues related to raising and management of the Funds’ resources. In F B&H, Fund for Environmental Protection is now in full operation. According to the Law on Fund for Environmental Protection of FB&H, Fund performs the activities related to collection of financial assets, initiation and financing of the preparation, implementation and development of the programs, projects and similar activities in the field of conservation, sustainable use and protection and improvement of the state of environment and use of renewable energy sources.

1.1.3. Relevant Institutions in Federation of B&H at Cantonal level

Each of 10 Cantons in F B&H has established Ministries specifically for waters, or has put water issues to be treated under some another Ministry (ministry for economy, environment etc.). Relevant cantonal ministries which treat water issues are listed in Annex 1.

The main functions and tasks related to water assigned to the Cantons include licensing and allocation of water resources under their competence (drainage, irrigation, water supply, waterways for navigation, hydropower, and water protection).

Cantons, either independently or in coordination with federal bodies, are competent for identifying the policy of environment protection and utilization of natural resources. Each canton adopted its own relevant Laws. (Law on Cantonal Government; Law on Cantonal Administration; Law on Cantonal Ministries and Other Administrative Bodies; Law on Local Self-governance; Water Law; Law on Environment; Law on Air; Law on Nature Protection; Law on Waste Management; Law on Spatial Planning; Law on Concessions; Law on Agricultural Land; Law on Forests)

1.1.4. Relevant Institutions in Federation of B&H at Municipal or Cantonal level

▪ Water Supply Companies

According to the Law on public companies (“Official Gazette of FB&H”, No. 8/05) Water Supply Companies perform certain activities in water management sector at local level, such as:

- production and distribution of water;
- waste water treatment and drainage;
- sanitary-technical activities and water quality control;

- management of public water supply and sewage;

1.1.5 Relevant Institutions in Republic of Srpska (entity level)

▪ **Ministry of Agriculture, Water Management and Forestry RS**

According to the RS Law on Ministries (Official Gazette RS No. 70/02, 33/04, 118/05 and 33/06), the Ministry conduct administrative and other professional work related to:

- protection and usage of agricultural land, protection of agricultural plants and products from diseases, pests and weeds;
- seed protection and trading, trading of nursery plants, production and improvement of cattle breeding;
- control of animal food and water;
- integral management over ambient waters;
- organizing water protection plans; protection against negative water impact;
- providing conditions for issuing permissions for water intake and usage;
- conducting and organizing water quality control;
- taking measures for providing water for water supply needs of population and industry;
- ensuring water supply for population and industry;
- ensuring hydro-melioration;
- inspection/monitoring done in the agriculture and veterinary medicine domain;

▪ **Ministry of Physical Planning, Civil Engineering and Ecology**

This Ministry, according to the Law on Ministries (Official Gazette RS No. 70/02, 33/04, 118/05 and 33/06) conducts administrative and other professional activities related to:

- integral planning and spatial planning and management;
- preparation and implementation of RS spatial plan; reviewing, administrative supervision and providing approval to: spatial plans for cities, municipalities, and special areas and the urban plans as well;
- revision of spatial-planning documentation, developing programs and investment-technical documentation specially important for RS;
- urban planning and construction;
- overall protection of the quality of the environment and its improvement through research, planning management and protection measures;
- protecting assets of general interest, natural resources, natural and cultural heritage;
- inspection supervision in the field of urban planning, civil engineering, utilities and environment protection.

▪ **Ministry for Industry, Energy and Mining**

This Ministry within its activities directs all issues related to the filed of energetic and mining industry, controls application of relevant Laws, rules and regulations. Ministry has competence for approval of project documentation with environment protection measures and regulations, relevant for energetic and mining industry.

Ministry for Industry, Energy and Mining performs administrative and other professional activities I the field of activities of energy and mining, and some of them relate to:

- geological surveying of natural mineral raw materials – metals, non-metals, nuclear raw materials and underground waters (thermal, thermal-mineral and drinking water) and their exploitation;
- collection and primary processing of industrial waste;

System

- making annual energetic balances;
- making annual and medium-term geological surveys programs;
- verification of mineral resources and keeping their cadastre, keeping cadastre of survey and exploration rights and other concessions' cadastre.

- **Ministry of Health and Social Protection**

According to the Law on Ministries of RS (Official Gazette No. 70/02, 30/04, 118/05, 33/06), the Ministry of Health and Social Protection carries out administrative activities and other professional tasks related to:

- protection and improvement of citizens' health and monitoring of health conditions and health needs of citizens;
- inspection supervision in sanitary field;
- providing information through the media and other public means and performs other tasks in accordance with relevant Law and other regulations of the RS and B&H.

The Government of Republic Srpska on its 97th session on January 11th 2013, has adopted decision on establishment of the Public institution "Waters of Srpska". According to this decision, two former RS Water Agencies – one for Sava river Basin (located in Bijeljina town) and one for Adriatic sea Basin (located in Trebinje town) are now merged to Public institution "Waters of Srpska". Public institution "Waters of Srpska" includes among other, the departments for Water Management of River Basin Sava and for Water Management of River Basin Trebisnjica;

- **Republic Hydro-meteorological Institute**

According to the Article 30 of the Law on Ministries of RS (Official Gazette No. 70/02, 30/04, 118/05, 33/06), Republic Hydro-meteorological Institute performs professional and other tasks related to:

- development and undertaking of hydrological, meteorological and seismological activities;
- research of the atmosphere, water resources, air and water quality and seismological processes;
- collecting, processing and publishing hydro-meteorological and seismological data of interest for RS and performing other tasks in the field of hydrology, meteorology and seismology.

- **Republican Institute for Geological Researches**

According to the Article 31 of the Law on Ministries of RS (Official Gazette No. 70/02, 30/04, 118/05, 33/06), Republic Institute for Geological researches performs is proclaimed as institution under responsibility of RS Ministry of industry, energy and mining and their professional and other tasks related to:

- basic geological research based on long-term plan of geological research
- elaboration of long-term plan of geological research
- elaboration of geological, hydro-geological, engineering- geological and seismology maps;
- elaboration of geological maps for physical planning, mining, construction and other activities;
- preparation of data for GIS;
- preparation of regulations, guidelines and standards for geological surveys.

- **Agency for Recognizing and Improving the Quality of Health Protection in RS**

According to the Law on Ministries of RS (Official Gazette No. 70/02, 30/04, 118/05, 33/06), the Agency carries out professional and other activities related to:

- promotion of the position and role of accreditation within the system of health protection quality improvement;
- proposing measures and standards for improvement of the quality of health protection.

- **Republic Authority for inspection affairs**

- Republic Authority is independent body which performs tasks of importance for RS. This Authority is established based on the Law on inspections in RS (Official Gazette RS, No. 74/10; 109/12; 117/12). Republic Authority includes, among other, the following Sectors for: agriculture inspection, water inspection, forestry inspection, urbanism-civil works and ecology inspections, health inspection e.t.c.

- **Environmental Fund**

Law on Environmental Protection Fund and its financing (Official Gazette of RS, No. 117/11) determines establishment of an Environmental Protection Fund, sets up scope of work, organization, administering and managing the Fund, purposes and use of financial resources of the Fund.

1.1.6. Relevant Institutions in RS at Municipal level

- **Water Supply Companies**

According to the Law on Public Companies ("Official Gazette of RS", No. 75/04 and 78/11). Law on communal activities ("Official Gazette of RS" No. 124/11) perform certain activities in water management sector at local level, such as.

- production and distribution of water;
- waste water treatment and drainage;
- management of public water supply and sewage;

1.1.7. Inter – Entity Environmental Body

Existing Inter entity body in B&H for the environment is established in order to facilitate entities' coordination on relevant issues but they have no executive power.

Inter – entity environmental body has eight members, four appointed by Federal Government and four by Government of RS.

Inter – entity environmental body is authorized for all environmental issues where harmonized approach of the entities is needed, and some of them are:

- Coordinating the implementation and enactment of laws and other regulations;
- Providing recommendations for the establishment of harmonized standards of the quality of environment at the entity level;
- Development of guidelines for the coordination and cooperation related to transboundary protected areas;

1.1.8. Relevant Government departments in Brčko District

The Government of Brcko District is divided into 10 departments and three of them are relevant for water:

- **Department for Agriculture, Forestry and Water Management**

Department for Agriculture, Forestry and Water Management performs professional, administrative and other duties of the Government related to:

System

- implementation of Laws and regulations of competent bodies and institutions of BiH and BD in domain of agriculture, forestry and water management, under the supervision and according to instructions of the Mayor of BD;
- Protection and effective utilization of forest and agricultural fund;
- Agro-industry,
- Veterinary and public veterinary services;
- Protection of forests,
- Proposing policies of capital development and pricing policy in the field of agriculture and forestry;
- Market interventions and reserves in the field of agriculture
- Rural development,
- Regulations, management and monitoring of activities related to:
 - Water systems;
 - Utilization of water,
 - Hydro-melioration;
 - Protection from water,
 - Management, maintenance, development, planning and research in the water sector;
 - Financing of water management installations.

- **Department for Public Affairs**

This Department is responsible for the following activities related to environment and water:

- Implementation of Laws and regulations of authorized bodies and institutions of B&H and District Brčko, from the field of communal activities, and under the jurisdiction and guidelines of the Mayor.
- Environmental protection and supervision of implementation of ecological standards;

- **Department for Communal Affairs**

This Department is authorized for development and maintenance of efficient water supply system, as well as for implementation of the laws and regulations of authorized bodies and B&H institutions and Brčko District for the field of communal activities, under the supervision and instructions of the Mayor.

1.1.9. Communal Utility of Brcko District

According to the Law on communal activities (Official Gazette No. 30/04, 24/07, 09/13), authorized departments of Government of Brcko District and all legal and physical persons, to which the Mayor consign the provision for communal services, can provide such services in accordance with the regulations of this Law. Communal Utility of Brcko District performs activities related to water at local level, such as:

- production and distribution of water;
- waste water treatment and drainage;
- sanitary-technical activities and water quality control;
- management of public water supply and sewage;

1.2. Overview on legal and regulatory frameworks for water

1.2.1. General remarks

This Chapter present the key laws and regulations dealing with water, but focusing mostly on ground waters. Full list of legislation and regulation relevant for water is

included in the Annex 2. of this report, including also legislation on agriculture, environment, nature and waste.

1.2.2. Relevant legislation and regulation in Federation of B&H

- **Water Law («Official Gazette of FB&H», No. 70/06) (20.11. 2006)**

This Law prescribes measures for water management, protection, and usage, establishment of the water information system and issuing of water acts. This law treats all categories of water, including ground waters.

According to article 4 of this Law, groundwater are: “all waters under the ground surface in saturated zone and which are in the direct contact with surface and ground soil layers”.

Article 49 of the Law defines that usage of water from the source and groundwater, for other purposes besides general, can be approved only if water research activities are previously performed.

Article 53. point 2, of this Law stipulates that it is forbidden to discharge the wastewater into a natural lake, pond, swamps and other natural water reservoirs, which have permanent or temporary inflow or outflow into / out of surface water or groundwater, as well as into water reservoirs, which were developed from removing or exploitation of mineral raw materials or other similar procedures, and which are in contact with a ground water.

Article 53. point 3, of this Law stipulates that it is forbidden to use water in a way that could endanger ecological and chemical status of natural lakes, fishponds, swamps and other natural water accumulations, which have permanent or temporary inflow or outflow of surface water or groundwater.

Article 53. point 4, of this Law stipulates that waste water discharge directly into groundwater is prohibited.

Article 53. point 5, of this Law, stipulates that indirect waste water discharge into groundwater is limited in the manner and under conditions, which determines the Law and by-laws arising from article 55, point 1., of this Law.

Article 55, of this Law stipulates that Federal Government is obliged to issue a regulation on limiting values of polluting substances in waste waters, and on other requests which concern discharge of a waste waters in surface waters and indirect discharge of waste waters in groundwater, as well as regulation on priority substances, on the proposal of the federal minister responsible for environment.

Relevant water sub-laws – decisions and regulations based on previous and actual Water Law

- Regulation on way of determination of environmental flow („Official Gazette of FBiH” No. 04/13).
- Regulation on conditions for discharge of waste waters into natural recipients or in sewerage system (“Official Gazette of FBH”, No. 4/12).
- Rulebook on determination of the conditions for definition of the sanitary protection zones and protective measures for drinking water sources used for public water supply (“Official Gazette of FBH”, No. 88/12).
- Regulation on methods of calculation, procedures and deadlines for payment and on control of execution of obligations according to general and special water fees («Official Gazette F B&H », No. 92/07 and 46/09, 79/11, 88/12)

System

- Decree on dangerous and harmful substances (Official Gazette of FBH, No. 43/07)
- Regulation on the minimal contents of the General Act on maintenance, utilization and observing the water management structures («Official Gazette F BiH», No. 18/07)
- Decree on classification of waters and on coastal sea waters within B&H borders («Official Gazette BiH », No. 18/80)
- Decree on water streams categorisation n («Official Gazette BiH», No. 43/67)
- Decree on borders of river basins at the territory of FB&H («Official Gazette F BiH », No. 41/07)
- Decree on amounts of spetial water fees («Official Gazette F BiH», No. 46/07)
- Regulation on the conditions of limited rights to use public water resources („Official Gazette of FBiH” No. 26/09) ;
- Regulation on determination of the border of the water good and on procedure of determination of affiliation of land particle to the public water good („Official Gazette of FBiH” No. 26/09);
- Regulation on conditions and criteria that must be met by the authorized person to perform professional and technical activities within the jurisdiction of the agency for water and method of issuing of mandate („Official Gazette of FBiH” No. 75/09, 43/10);
- Decree on types and content of the plans for protection from harmful water operations („Official Gazette of FBiH” No. 26/09);
- Regulation on the procedures and measures in cases of accidents on water streams and coastal water land („Official Gazette of FBiH” No. 71/09);
- Regulation on the designation of areas subject to eutrophication and nitrate-sensitive areas („Official Gazette of FBiH” No. 71/09);
- Regulation on the monitoring of areas subject to eutrophication and nitrate-sensitive areas („Official Gazette of FBiH” No. 71/09);
- Regulation on the establishment and management of water information system („Official Gazette of FBiH” No. 77/09);
- Regulation on conditions to be met by reference, or authorized laboratories for water analyzis, on content and manner of granting mandate („Official Gazette of FBiH” No. 14/10, 14/13);
- Decision on the establishment and appointment of members of the Advisory Council of the Sava river basin („Official Gazette of FBiH” No. 77/09);
- Decision on the establishment and appointment of members of the Advisory Council of the Adratic basin („Official Gazette of FBiH” No. 80/09);
- Decision on the type and amount of the costs of advisory councils of river basins („Official Gazette of FBiH” No. 75/09);
- Instructions on issuing water acts for the works which are performed on the reconstruction and maintenance of watercourses („Official Gazette of FBiH” No. 04/11).
- Federal operational plan for flood defence („Official Gazette of FBiH” No.7/11);
- Regulation on conditions and criteria which must be met by specialised and mandated legal body for conducting of measures for removal or prevention of water pollution in case of sudden water pollution or risk from sudden water pollution and on way of issuing mandate („Official Gazette of FBiH” No. 06/11)
- Regulation on changes and amendments of the Regulation of manner of payment of public budget’s incomes and external budget’s funds at the territory of Federation BiH („Official Gazette of FBiH” No . 97/07);

System

- Regulation on the contents, scope, conditions and methods of issuing and saving the water management acts («Official Gazette F BiH», No 06/08, 57/09, 72/09 and 68/12)
- Regulation on content and way of managing records and submission of data on abstracted water quantities Official Gazette F BiH» No. 83/08)
- Regulation of health safety of potable water («Official Gazette of B&H» No. 40/10, 43/10 and 30/12)
- Regulation on conditions and criteria which must be met by legal body for elaboration of documentation based on which the water acts are issued („Official Gazette of FBiH” No. 17/08, 38/12).
- **Relevant Laws and regulations related to water concessions and inspections**
- Regulation on the concessions on waters and public water good («Official Gazette F BiH», No. 8/00)
- FB&H Law on inspections («Official Gazette F BiH», No. 69/05)
- **Law on geological research in FB&H («Official Gazette of FB&H», No. 9/10 and 14/10)**
- **Law on unique method for determining, recording and collecting of data on reserves of mineral raw material and groundwater and on their balance (Official Gazette R BiH“ No:8/93)**

According to this Law, groundwater, which are being determined, evidenced and for which data are collected on reserves and balance is prepared, include drinking, mineral and thermal waters. All companies that are authorized for research of mineral raw material and groundwater and for their exploitation are obliged to determine, evidence and deliver data on mineral raw material and ground waters reserves to the Ministry of energetic, mining and industry of B&H. Ministry will, based on that, prepare and adopt “Balance on mineral raw material and groundwater of B&H, with analyze of natural indicators”.

- **Rulebook on categorization, classification and calculation of the groundwater and on managing of records on them („Official Gazette of FBiH“ No. 47/11)**

This Rulebook prescribes unique criteria for determination of groundwater reserves, conditions for its selection in categories and classes, methods for calculation and manner of evidencing of the ground water reserves.

- **Rulebook on managing cadastre of groundwater („Official Gazette of FBiH“ No. 38/11)**
- **Law on mining («Official Gazette of B&H», No. 26/10)**

According to articles 4 and 5 of this Law, mineral and thermal waters, as well as gases which appear with waters are considered as industrial mineral raw material.

Article 71 stipulates that minister of work and social policy, in agreement with minister of energetic, mining and industry and ministry of agriculture, water management and forestry can determine the wider protection zones of healing springs of mineral and thermal waters, where mining works could be performed only if protective measures of the healing springs are undertaken.

According to article 75, if the works in the pits and surface diggings or in its parts must be terminated due to not expected obstacles such as waters, the Ministry of energetic, mining and industry of B&H must be informed within 24 hours after suspension of the works.

Article 91 stipulates that for mine pits with the high water inflow and complex tectonic, minister of energetic, mining and industry can prescribe elaboration of hydro-geological plans.

- **Legislation relevant for agriculture**

- Law on agriculture land (Official Gazette FB&H, No, 52/09)

as well as many relevant regulations, decisions and decrees.

1.2.3. Relevant legislation and regulations in Republic of Srpska

- **Water Law («Official Gazette of RS», No. 50 /06 and 92/09, - adopted on 11.05. 2006)**

This law prescribes measures for water management, protection, usage, establishment of the water information system and issuing of water acts. This law treats all categories of water including ground waters.

According to article 4 of this Law, ground waters are: “all waters under the ground surface in saturated zone and which are in the direct contact with surface and ground soil layers”.

Article 50 of this Law defines that usage of water from the source and groundwater, in other purposes besides general, can be approved only if water research activities are previously performed.

Article 57, point 2., of this Law stipulates that it is forbidden to discharge the wastewater into a natural lake, pond, swamps and other natural water reservoirs, which have permanent or temporary inflow or outflow into / out surface water or groundwater, as well as into water reservoirs, which were developed from removing or exploitation of mineral raw materials or other similar procedures.

Article 57. point 3, of this Law stipulates that it is forbidden to use water in a way that could endanger their ecological and chemical status of natural lakes, fishponds, swamps and other natural water accumulations, which have permanent or temporary inflow or outflow into / out surface water or groundwater.

Article 57. point 4, of this Law stipulates that waste water discharge directly into groundwater is prohibited.

Article 57. point 5, of this Law stipulates that indirect waste water discharge into groundwater is limited in the manner and under conditions, which determines the Law and by-laws arising from this Law.

Article 67 of this Law stipulates that the Ministry of Agriculture, Water management and Forestry of RS, in accordance with the provisions of this Act, shall issue regulations on the limiting values of pollutant substances in waste water, and on other requirements related to waste water discharge in surface water, soil, public sewage system, as well as for other dangerous substances whose discharge is prohibited into water, soil that belongs to water good, forest and agricultural land. Before preparation of these regulations, the Ministry will ensure its compliance with the regulation of another entity, through consultation at their adoption.

- **Relevant water sub-laws – decisions and regulations**

System

- Regulation on the conditions of discharge waste waters into the public sewage system («Official Gazette RS», No. 44/01)
- Regulation on water classification and categorization of water streams («Official Gazette RS», No. 42/01)
- Decision on determination of the borders of river basin areas (districts) and watershed areas at the territory of Republic of Srpska («Official Gazette RS», No.98/06)
- Decision on the special water fees («Official Gazette RS», No. 53/11)
- Decree on corrections and amendments of the Decree on the methods, procedures and deadlines to calculate and pay the special water fees («Official Gazette RS», No. 53/11; No. 16/12)
- Regulation on the treatment and discharge of waste waters for the cities and districts where there is no public sewage system («Official Gazette RS», No. 68/01)
- Regulation corrections and amendments to the Regulation on the method of maintaining the river beds and water soil («Official Gazette RS», 22/06)

- Regulation on the protection measures, method of determining and maintaining of the zones and strips of the sanitary protection areas («Official Gazette RS», No. 7/03)
- Regulation on the way and method of determination of the pollution level of waters («Official Gazette RS», No. 79/11, amended 25/12 and 36/12)
- Regulation on the conditions to be necessarily met by the water labs («Official Gazette RS», No. 44/01)
- Decree on public participation in water management («Official Gazette RS», No. 35/07)Regulation of health safety of potable water («Official Gazette of B&H” No. 40/10, 43/10 and 30/12)

- **Relevant Laws and regulations related to water concessions and inspections**
- RS Law on the concessions («Official Gazette F BiH», No. 25/02) RS Law on inspections («Official Gazette RS», No. 74/10; 109/12; 117/12)
-
- **Law on mining («Official Gazette RS», No. 59/12)**

According to article 3 of this Law, mineral and thermal waters, as well as gases /which appear with waters are considered as mineral raw.

According to article 74, each employee employed at the concessionaire is obliged to immediately inform its line manager if the danger occurs during the performance of the mine works, especially about occurrence of the explosive and flammable gasses ,water inflow, fire or other appearances which might endanger safety of the people and property.

Article 54 stipulates that concessionaire which performs works must obtain hydro-geological and tectonic plans for mine pits with the high water inflow and complex tectonic.

- **Law on geological research in RS («Official Gazette RS», No.51/04 and 75/10)**

This Law determines basic geologic activities including discovering and determination of the mineral raw, groundwater and geothermal energy, as well as the rational use of those resources.

Article 4 of this Law defines the mineral raw material, and according to it, all ground waters (drinking, industrial, mineral, thermal and thermo-mineral), are considered as mineral raw material.

According to the article 11 of the Law, geological researches can not be performed on the site with settlement, public roads, water management facilities, cultural monuments, natural parks, sources of a mineral, thermal and other water as well as on the area which is proclaimed as protected (national parks, forests, mineral springs). Only in case when the researches are of a general interest, they can be performed on these sites, but in the way prescribed by a Government of the Republic of Srpska.

According to the Article 11 of this Law, geological map are being prepared with the purpose of discovering general geological composition and structure of certain site, trough the position and concentration of mineral raw materials and groundwater. Preparation of the geological maps includes general geologic maps, geomorphological, hydro-geological and other maps which presents different geological characteristics.

- **Law on mining («Official Gazette RS», No 107/05 и 75/10)**
 - **Regulation on data base of licence and cadastre concessions and investigated sites («Official Gazette RS», No. 6/09)**
 - **Rulebook on classification and categorisation of mineral resources and managing records on them («Official Gazette RS», No. 99/08)**
 - **Rulebook on methods and procedure for determination and certification of mineral resources («Official Gazette RS», No 113/08)**
 - **Rulebook on content of programs and designs and studies on geological investigations) («Official Gazette RS», No. 113/08)**
- **Legislation relevant for agriculture**
 - Law on organic production (Official Gazette RS, No, 12/13)
 - Law on agriculture lend(Official Gazette RS, No, 14/10)
 - Law on agriculture (Official Gazette RS, No, 71/09)

as well as many of relevant regulations, decisions and decrees.

1.2.4. Relevant legislation and regulation in District Brcko

- **Law on Water Protection (Official Gazette of DB, No. 25/04, 1/05 and 19/07)**

According to this law under waters are considered all waters, natural and artificial, surface and groundwater.

The Law is mostly treating water protection, but it consists several provisions on water permitting relevant for water abstraction/ usage : .

Article 43. stipulates that “ Water protection authorization is to be issued in cases of direct usage of water for:

1. Water supply for drinking purposes from individual sources or public water supply systems
2. Technological processes
3. Swimming and Bathing

4. Heating energy production
5. Irrigation of agricultural land
6. Production of energy in hydro – power plants
7. Water facilities for flower production
8. Fisheries and other aquatic organisms rising
9. Port construction (river port)
10. Waste water discharges and hot water discharge
11. All other water pollution loads

Article 43. stipulates that a Mayor of Brčko District defines the list of direct water usage activities for which water authorization is not required.

Article 18 of this Law stipulates that water protection and protection of water ecosystems includes: classification of surface and groundwater, prohibitions and restrictions related to water loads, special prohibitions and restrictions in protected areas, control and collection of data related to water protection and other measures determined by this Law.

The Mayor of Brčko District determines limiting values for chemical, physically-chemical and biological parameters for bathing waters, drinking, and for mineral, thermal and thermo-mineral waters, according to the article 22, of this Law.

Article 23, point 2., of this Law stipulates that direct discharge of waste waters in to the ground water is forbidden.

Article 23, point 3., stipulates that direct discharge of waste waters, emission of heat into groundwater and absorption of heat from groundwater, can be performed only in the way and under conditions prescribes by this Law.

Article 23, point 4., of this Law stipulates that it is forbidden to discharge waste waters in to the natural lakes, fishponds, and natural water accumulations with permanent and periodical inflow and outflow in / out surface water and groundwater, as well as discharge into water accumulations during the extraction and use of the raw minerals and other similar cases of water use.

Article 23, point 5., of this Law stipulates that it is forbidden to use water which degrades chemical and ecologic state of waters in natural lakes, fishponds and other natural water accumulations with permanent and periodical inflow and outflow into / out surface water and groundwater.

Article 34 of this Law stipulates that authorized agency for watershed area determines protected areas with purpose of protection of water flows or parts of a water flows, and protection of groundwater flow towards the watershed areas, in order to be usable for drinking water, for bottling of natural water and for usage of mineral, thermal and thermo-mineral water for production of drinks.

Article 35 of this Law stipulates that if the water source is discovered, and which has importance for water supply, or is a source of mineral, thermal, or thermo-mineral or groundwater for production of drinks, the Mayor can bring a decision on proclamation of a protection of the zone where the source is located, on the proposition of an authorized agency for watershed area.

1.2.5. Socio economic incentives and obstacles to effective groundwater management

Water Sector Financing

Funds for performing water management tasks, defined by water entities' Laws (FB&H and RS) are ensured through "general" and "special" water fees in F B&H, and through "special" water fees in RS:

- **General water management fees**

paid by all employees in the amount of 0,5% of their net salary (this fee exist only in FB&H);

- **Special water fees:**

1. Water abstraction fees for usage of surface and groundwater include:
 - water abstraction for public water supply, paid by water supply companies, and then passed to the final consumers for payment (KM/m³);
 - water abstraction for producing bottled water and mineral water (KM/m³);
 - water abstraction for irrigation (KM/m³);
 - water abstraction for utilization of water for fish farming (KM/m³);
 - water abstraction for industrial processes, including thermo power plants (KM/m³);
 - water abstraction for other purposes (KM/m³).
2. Special water fee for production of electricity by using hydro energy (kWh/m³);
3. Water protection fees:
 - fee paid by owners of transport vehicles using oil and oil products;
 - fee for wastewater discharge based on PE;
 - fee for fish farming, paid in KM/kg of produces fish;
 - fee for using fertilizes and chemicals for crop protection;
4. Charges/fees for sand and gravel abstraction (KM/m³ of sand/gravel)
5. Charges/fees for protection from waters (flood protection), paid by:
 - owners of agricultural, forest or construction land protected by water protection objects (KM/ha);
 - owners of residential, business and other facilities protected by water protection objects (KM/m²).

In FB&H, these charges/fees are distributed among the following institutions:

- 40% to the relevant Water Agency;
- 45% to the Cantonal budgets; and
- 15% to the Environment Protection Fund.

In RS, distribution of charges/fees, except for first three charges from item 3. is performed as following:

- 70% for the special water purposes account;
- 30% for local authorities budgets

First three charges from item 3. are distributed as follows:

- 55% for the special water purposes account;
- 15% for special purpose of environment protection in RS;
- 30% for local authorities budgets.

The base amount of the special water fees is determined by entity governments based on the proposal of the entity ministries responsible for water, and ministries for environment, with the previous agreement with entity ministries responsible for finances.

Some of established charges and fees contribute to a certain extent to internalization of environmental and resource costs.

Revenues collected from water management fees are earmarked for the investments in the water sector, such as: financing of construction and maintenance of some water facilities, elaboration of water management plans and other activities related to water management, in accordance with the annual plan and program of the relevant ministries responsible for water.

Water companies make plans on annual bases, in coordination with the local level authorities, on the needs for investments in water and wastewater services. These plans are then submitted to the Water Agencies, which forward them to the entity authorities, which make the final decision of the investments. There are no long-term plans on improvements and investments in the water and wastewater.

Water pricing and costing

▪ **Main water users in B&H**

The main water users in B&H are households, industry and agriculture. Apart from that, water resources are also used, and are planned to be used more as a hydro-power potential. Water supply systems in B&H (for households, industry and agriculture) rely mostly on underground waters (more than 85%), so only rare systems use surface waters for water supply.

• Domestic Water Supply

Central Municipal Water Supply Systems in B&H are managed by more than 120 Water Utilities in B&H, which are usually organized as Public companies, owned by Municipalities, or Cantons (F B&H, Sarajevo Water Utility), or Cities (Mostar and Banjaluka, F B&H and RS respectively).

According to National Environment Action Plan for B&H (NEAP), Central Municipal Water Supply Systems, managed by Municipal Water Supply Utilities cover 56% of population in FBH and 48% of RS. Population which is not covered by Central Municipal Water Supply System rely on their own – local community water supply systems or on individual wells.

• Irrigation

Bosnia and Herzegovina was even before the war country with much less irrigated surfaces than world average. According to Federal Strategy of Agriculture for 2006-2010, B&H irrigate only about 8000 ha of surface, i.e. about 0.5 % of cultivable land, or 0.8% of arable land.

However, due to the past war (1992 – 1995), some of irrigation systems were destroyed and out of usage, but some were reconstructed again, after the war. Irrigation is now mostly present in the southern, Mediterranean part of B&H, as well as in northern part of B&H (close to Sava river), but also in some other parts of the country.

The irrigation systems and water usage are managed by agriculture enterprises, associations and individual farmers.

Currently, exact technical data on irrigation facilities does not exist, so as data on quantities of water used for irrigation (not systematically collected), or data on modes of irrigation.

• Industry

According to NEAP, industries in BiH mostly use water from its own sources, but also from the public water supply system. It is assumed that industrial production in Bosnia and Herzegovina is to a large extent smaller than at the beginning of 1990s (about 35% of the pre-war capacities). Due to this fact, the water consumption in the industrial sector has been reduced, which also contributes to reduction in terms of pollution.

- **Hydro Power systems in B&H**

Currently, in B&H's power sector there are three major producers and distributors of electricity, public companies – Elektroprivredas (EPs): Elektroprivreda B&H (EP B&H), Elektroprivreda Hrvatske Zajednice Herceg-Bosne (EP HZHB) and Elektroprivreda of the Republic of Srpska (EP RS). Each EP has its own generation and distribution facilities and is in charge of generation, distribution and supply on its territory.

The existing hydro power plants in B&H are in charge of those three public enterprises, and their total Hydro power Plant (HPP) Power House output is 1990.7 MW, while total expected annual production is 5809.9 GWh.

Behind 26 dams (5 rock- and earth-filled dams, 20 concrete dams and one constructed from blocks), are the reservoirs with total storage capacity of 3,85 km³, or approximately 10 % of total runoff volume in B&H (38 km³).

With its hydro energy potential, B&H is at eleventh position in Europe (without the European part of Russia, behind Norway, Sweden, France, Italy, Austria, Island, Spain, Switzerland, Serbia and Montenegro), and in front of Germany, Portugal, Finland and Ukraine, which have similar potential. A large part of other European countries has much smaller potential than B&H.

Usable hydro potential is estimated to 22 TWh per year, and the potential used today is approximately 40%.

Unused potential for small-scale hydro power plants is approximately 2.500 GWh per year. Studies from the period 2000-2002, identified approximately 140 small-scale plants from 1 to 5 MW.

According to the existing plans of Power Companies (Elektroprivredas) in B&H, EP B&H plans to construct 8 new big HPPs and several new small-scale HPPs, EP HZHB plans to construct or extend 8 new big HPPs and several new small-scale HPPs and EP RS plans to construct 10 new big HPPs and several new small-scale HPPs. Taking into consideration all planned HPPs (including EPB&H, EPHZHB and EPRS), the total planed (HPP) Power House output is expected to be 1865 MW and total expected annual production is 5072 GWh.

In addition to public Power Companies (Elektroprivredas), new projects will be managed by several other, private companies from both entities, as well as foreign concessionaires.

- **Water costs and pricing**

As water supply is under responsibility of Water Supply Companies, water supply pricing policy is under the jurisdiction of local authorities (Municipalities, Cantons or towns). There are no decisions or policies on a higher level (national or entity's) which determine a unique water price for all. Water supply companies propose the prices, but the final decision is made by the Municipal Councils.

Water prices usually slightly differ from one municipality to another, as they are set independently in each municipality.

Current water prices for water supply range from 0.4 – 1.10 KM/m³ (1 Euro = 1,9558 KM) for households, and 1.0– 3.50 KM/m³ for industry.

For the agricultural sector the prices are sometimes equal to those for households, and in other cases they are equal to those for industry.

Furthermore, water supply prices for industrial sector are usually much higher compared to prices for households in the same Water supply Company. It is a kind of cross-subsidies between different consumer categories.

Generally, in all Water Companies, the price structure consists of the following elements:

System

- price of water (KM/m³),
- VAT on water price,
- price of sewage (KM/m³ of water used),
- VAT on sewage price,
- Internalised resource costs through a “water abstraction fee”,
- Internalized environmental costs through a “water protection fee”.

Cost recovery

Generally, the revenues collected from water and wastewater tariffs are covering only the part of the operation and maintenance costs (O&M) of water companies, without leaving the assets for necessary improvements and investments.

As stated, in many Water Supply Companies revenue collection is not sufficient to cover annual expenses of the system (O&M), even if rate collection is 100%. It is due to the fact that, mostly, current system of establishing water tariffs is not based on cost - recovery principles, i.e. the rates are not economic than social. Political ambient is such that Municipal Councils very often does not allow increasing of tariff rates when required by Water Supply Companies. So, cost recovery is one of major problem for Water Supply Companies, generating serious problems for investments financing and generally, their sustainability.

Water Permits

According to the new entities Water Laws (2006. year), water permits are issued by entities' Water Agencies through three steps: Water regulatory pre-authorization, Water regulatory authorization and final Water regulatory permit.

Water regulatory pre-authorization are used for defining if the conditions exists for usage of water, as well as for defining of conditions which must be met by documentation for construction of new or for reconstruction of existing structures, for changes of technology and other works that are not regarded as construction, and that can permanently, occasionally or temporarily affect the changes of water regime.

Water regulatory authorization defines that the documentation attached with the application for issuance of water regulatory authorization is in accordance with the enacted water regulatory pre-authorization, with regulations on waters and plan documents.

Water regulatory permit defines the purpose, the way and conditions for water utilization, water regime of the structures and facilities, way and conditions of discharge of waste waters, as well as the gasses into the atmosphere, the way and conditions of disposal of the solid and liquid wastes and other conditions. Water regulatory permit defines that conditions defined by water authorization are met. It is valid for limited time, with maximum validity of 15 years.

The following activities are, regardless of their impacts, subject to a water authorization and permit:

1. abstraction of waters (for industry and energetic purposes, domestic water supply, agriculture, tourist services and services which uses the water in their technological processes);
2. discharge of wastewater into surface water;
3. indirect discharge of water into ground waters;
4. artificial recharge of groundwater;
5. extraction of material from watercourse;

6. construction of facilities to utilize hydro-power;
7. permanent transformation of land area into water area;
8. construction of flood protection facilities;
9. construction of roads including forest roads;
10. construction of bridge or other structures over or in a navigable watercourse;
11. construction of lend fields;
12. initiation of concessions procedures related to waters
13. transport of hazardous materials and their products which end up in water upon its usage
14. water courses regulation

Water regulatory authorization and permits are to be issued also for the activities which can:

1. temporarily or permanently degrade the quality of waters, or impede the improvement of their existing quality;
2. harmfully impact aquatic or semi-aquatic ecosystems;
3. increase the risk of flooding or erosion; or
4. significantly reduce the quantity of waters, change the morphology of a watercourse; alter the depth, water level or flow in a watercourse, impede the recreational use of surface waters.

According to the Water Law of FBiH Art no. 110 Water act are not needed for water usage which does not exceed the amount of general water usage as : water intake from special devices and water streams and lakes for basic needs of one household, groundwater intake (well on private property) or water from the source on private property which is used for basic needs of one household, collection and usage of stream waters for basic purposes of one household collected at own private property and recreation on waters.

Economic instruments and incentives

- **Abstraction fees** prescribed by new Water Laws (2006. year) are elaborated in the above Chapter
- **Subsidies:**

Local communities' authorities (Municipalities) have interest to subsidize Water Supply Companies, since Water Supply companies' infrastructure is mostly owned by Municipalities, which is in charge for adoption and implementation of the program of investment into water works and equipment.

Since such infrastructure is of interest for the entities and cantons as well, a certain part of the financial resources for construction is secured at that level too. Also, Water Supply Companies receive some financial resources from the local (Municipal) authorities for investments and reconstruction works.

Municipal Authorities through their Water Supply Companies, in some cases, provide subsidising of some consumer categories such as low income population or retired people.

Agriculture policies does not envisage water subsidising.

- **Agrochemical pollution – reduction measures:**

The Law on Agricultural Land of F B&H (“Official Gazette of FBiH” No. 52/09)) defines management and protection of agriculture land. The Law forbids discharge and disposal of dangerous and harmful materials in agricultural land which can have negative effect on agriculture land productivity, as well as irregular application of mineral and organic manure.

Federal Ministry for Agriculture released the sub-law on limits hazardous and dangerous materials which are not allowed to be discharged into agricultural land

The Federal Ministry for Agriculture released a sub-law which regulates maximal level of dangerous and hazardous material that can be found in the land/soil (“Official Gazette of FBiH” No. 72/09). This sub - law provides methods for examination of usage of sewerage sludge from waste water treatment plants, as well as organic and mineral manure, pesticides and herbicides.

The Law on Agricultural Land of RS (“Official Gazette of Rs” No. 93/06 and 14/010) year) defines the responsibilities of Ministry of Agriculture, Forestry and Water Management of RS, as well of Municipalities and Towns, in terms of agriculture land protection. These responsibilities must be in accordance with the main planning documents for land protection and usage of agricultural land. These documents defines on local level, inter alia, the areas that should be irrigated, possibilities of re-ionisation, define surfaces suitable for healthy food production, sets the level of agricultural land erosion, etc.

The Law forbids discharge and disposal of dangerous and harmful materials in agricultural land and in irrigation channels.

The Law also forbids irregular application of mineral and organic manure which will cause existence of dangerous and harmful materials in agricultural land, ground water and rivers.

Ministry for Agriculture in cooperation with Ministry for Health regulates the obligation to define the maximal level of dangerous and hazardous material that can be found in the land/soil and water for irrigation. Disposal of liquid manure, waste water, sewage sludge etc. to agricultural land is not defined.

1.3. Known gaps in the policy and legal framework

Water sector reforms in B&H, which started in late nineties and is currently still in process, supported mainly by EC programs, has lead to elaboration of new water legislation, based on the EU Water Framework Directive, as well as to reforming of some water sector institutions and introduction of water management at a river basin level.

Consequently, the two entities’ Water Laws harmonized between each other, as well in line with Water Framework Directive, have been adopted in both entities in 2006. year, and started to be implemented in 2007. year. The Laws prescribed establishment of adequate institutional organizations (Entities’ Water Agencies) and sustainable system of funding of the water management sector. Within the water sector reform water quality/ quantity monitoring projects at the river basin level were also implemented, putting more focus on surface water quality, rather than groundwater.

However, the new water Laws present a framework Laws which should be future elaborated through specific laws and by – laws.

The major gap in water legal framework presented non-existence of relevant by-laws. During the last period quite number of sub –laws were elaborated. Twenty six by-laws was adopted in FBiH on the basis of the new Water law and 4 by-laws

System

adopted on the basis of the former Water Laws are still in force while expecting to be replaced by new by-laws. RS has adopted 9 by-laws on the basis of the new Water Law, while 6 by-laws adopted on the basis of the former Water Laws is still in force.

Consequently, there is no any specific legislation or regulation relevant for groundwater. Limiting values for certain substances for surface water were established through by-laws in both entities, but for groundwater not yet. The issue of monitoring ground water quality and quantity is completely lacking. Monitoring of groundwater quality has never been very well established in B&H, so there is no clear understanding on impact to groundwater environment. Monitoring equipment in B&H is almost completely destroyed during the war activities, so the current activities on water quality monitoring are brought to minimum. As a consequence, the only available information are those on quality of effluent, and some earlier quality analyses of surface waters.

According to the Water Laws, Entity Ministries were responsible for preparation of entity Strategies for Water Management until 2009. year, for the planning period of 12 years. General objectives of the Strategies are the following:

- 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,
- fulfilment of responsibilities from international contracts which are binding for B&H.

The indirect objectives of the Strategy, through creating a policy of water sector development, are:

- providing sufficient drinking water quantities for the population, and increasing the percentage of population connected to public water supply systems;
- providing sufficient water quantities for development of other economic activities in accordance with real possibilities and development plans of specific sectors;
- increase of safety level from the negative effects of water on people and property;
- improvement of water quality with a long-term objective – achieving and preserving good status of waters.

Article 24. of Water Law of FBiH (“Official Gazette” of FBiH No. 70/06) defines the preparation and adoption of Water Management Strategy.

Federal Strategy was prepared as the draft in 2010 for period 2010-2022 and is adopted by Government of FBiH as well as the Parliament of Federation of Bosnia and Herzegovina in November 2011.

RS has elaborated the “Framework Plan for Development of Water Management in RS” in 2006. year, which actually represents the base for Strategy for Water Management in RS. Draft RS Strategy of integrated Water management up to 2024 was prepared in 2012 and is currently in the adoption phase.

Furthermore, according to the Water Laws, Water Agencies are obliged to prepare Water Management Plans for river basins, specifically for Sava river basin and Adriatic Sea basin, until 2012. These Plans should be revised and updated every 6 years. However, FB&H Water management Strategy sets more flexible deadline for elaboration of river basin Management plans – 2015, including program of measures.

River basin management Plans were not elaborated, but are in the process of elaboration. For the rivers Krka and Cetina, the characterization report has been completed. Also, within the Project “Managing of Neretva and Trebišnjica rivers”, river basin management plan for rivers Neretva and Trebišnjica on the FB&H territory are also on-going. Delineation of groundwater bodies in RS, for Trebišnjica and Neretva River basins located in the territory of the RS, was performed as part of the above project “Managing of Neretva and Trebišnjica rivers”.

Inter – sectoral coordination during preparation of legislation is also weak point in B&H. As a consequence, water issues are not sufficiently or not at all addressed within other legislation.

Environment legislation to some degree addresses a need for protection of water through requiring water permits in the process of issuing integrated environmental permits. Prevention of pollution is regulated by the Environmental law through procedure of environmental impact assessment and integrated environmental permit, but B&H has no national BAT documents. Entity Laws on Environmental Protection include requirements of IPPC Directive, the Seveso II Directive, the Landfill Directive, the Environmental Impact Assessment Directive etc.

Agriculture and/or Land legislation is only focused on the protection of agricultural land.

1.4. State of Law enforcement

Enforcement of measures for the water quality insurance is applied according to the new Water Laws, as well as through the application of different water related by – laws such as:

By-laws relevant for general and special water fees which enforce payment of special water protection fees as following:

- fee paid by owners of transport vehicles using oil and oil products;
- fee for wastewater discharge based on population equivalent (PE); Competent bodies are monitoring effluent quality, e.g. they are determining the pollution load based on the population equivalent number (PE). It is the unit of measure used to compare the organic load of wastewaters generated by generic not necessary household sources. Population equivalent refers to the amount of oxygen-demanding substances whose oxygen consumption during biodegradation equals the average oxygen demand of the waste water produced by one person. For practical calculations, it is defined that one unit equals 60 grams of BOD5 per day. Since it includes other sources of wastewater, population equivalent doesn't necessarily reflect the actual population of a community (or Agglomeration).
- fee for fish farming, paid in KM/kg of produces fish;
- fee for using fertilizes and chemicals for crop protection;

By-laws relevant for water quality laboratories performance

These Rulebooks defines conditions to be necessarily met by the authorised labs for the tasting of the quality of land, ground water and waste water, technical conditions (space and equipment), human resources, good lab practices and management which fulfil international standards requirements and users needs.

By-laws relevant for classification of waters and categorization of water courses

This decree regulates class of water according to quality which supports ecological function of given types of aquatic systems, as well as use of water for current and planned needs, and refers to all surface waters (rivers, lakes, artificial and heavily modified water courses) and ground waters.

By – laws relevant for defining of water protection zones of drinking water sources

These by –laws define methods for establishment of water protection zones, protection regimes and protection measures which are to be implemented in those zones.

Law on Environment Protection contributes to the enforcement measures for water protection by incorporating water permits into integrated environmental permit.

The scope of the Environmental Law cover all environmental media (air, water, soil, flora and fauna, landscape, built environment). Installation may be built and operated only if they have environmental permit issued in accordance with provisions of this law. This permit provides high level of integrated environmental protection through protection of air, water and soil - all forms of activities which utilize, load, or pose hazard to, or pollute the environment, or have an impact on the environment (such as noise, vibration radiation - with the exception of nuclear radiation, waste, etc.).

1.5. On-going and planned activities to improve/update the current legal and regulatory framework

Primary water and environment legislation in B&H is fairly modern and to a considerable extent harmonised with the EU acquis.

The main issue of water sector in this moment is secondary, i.e. implementing legislation, which was during last year's lagging far behind needs and plans. Both entities' water Ministries are currently working on elaboration of secondary water legislation. See Annex 2.

Water management Strategy of Federation of B&H presents the constituent part of the Environmental Protection Strategy. Water management Strategy of Federation of B&H was adopted on November 20th, 2011., for planning period of 12 years (2010.-2022.) .

RS has elaborated the "Framework Plan for Development of Water Management in RS" in 2006. year, which actually represents the base for Strategy for Water Management in RS. Draft RS Strategy of integrated Water management up to 2024 was prepared in 2012 and is currently in the adoption phase.

Project "Support to B&H Water Policy", funded by the EC has been completed. Its implementation presented the important step toward transposing EU water related acquis into B&H legislation, toward development of secondary legislation in both entities i.e. FB&H and RS (regulation on wastewater discharge, regulation on water laboratories, regulation on water characterisation, regulation on RBM Plans, regulation on water sources protection as well as understanding of economic analysis as required by WFD).

Apart from secondary legislation and policy development in B&H, of the biggest significance is organizing, reconstructing and modernizing the existing, or improving inadequate monitoring of water quantity and quality.

According to the new Water Laws, future Water management Plans for two River Basin Districts will include map of monitoring network and overview of results of monitoring program including following:

- Status of the surface waters (ecological and chemical)
- Status of the groundwater (chemical and quantitative)
- Status of the protected areas

Taking this requirements into account and based on the recommendations, as well as equipment and capacity building activities, provided through the EC Project "Water quality monitoring at the river basin level", Water Agencies as well as Hydro-meteorological Institutes are gradually improving water quality and quantity monitoring system is in both B&H's entities.

1.6. Link to implementation of EU Water Framework Directive

B&H's strategic goal is joining the European Union. Therefore, a variety of activities are taking place in order to prepare the accession, including the signing of the Stabilization and Association Agreement with the EU, which occurred in June 2008. Although it is not a member of European Union and so, has no formal obligation to implement the EU regulations, B&H, with its both entities, express the will to implement EU Water Framework Directive (WFD).

The intention to implement the WFD is expressed by signature of Memorandum on Understanding within national CARDS project "Institutional Strengthening of Water Sector in B&H", signed between the Delegation of European Commission in Sarajevo and Council of Ministers of B&H, and Entity Governments, with the goal to: "harmonize, finalize and approve the reform of water sector in Bosnia and Herzegovina, based on principles and goals of EU Water Framework Directive (2000/60/EC)".

Within this project, new Water Laws for both entities were elaborated, incorporating basic principles of Water Framework Directive.

Entity Water Laws are to great extend harmonized with each other, but there are some slight differences. Therefore, WFD transposition into these laws is not completely the same. Transposition of WFD into Water Law in Federation, according to the Progress Monitoring Report related to transposition of EU acquis, prepared for period 2010-2011, Hulla&Co. Human Dynamics KG is 90%. In Republic Srpska, transposition of WFD into Water Law of this entity is 99%,

Since the WFD requires the implementation of the other water relevant EU-Directives, it is important that these are also found in entities' Water Laws and other regulations. Some of the most relevant Directives for B&H, transposed in some degree in B&H legislation are discussed below:

According to the above mentioned Hulla&Co. Human Dynamics KG, the transposition of the "Urban Waste Water Directive" (UWWWD, 91/271/EEC) into the Water Law in B&H is still at an early stage. Transposition of UWWWD into Federal Water Law and other regulations, according to the above source, is 35%. Even though there is san

evident progress in comparison with the Progress Monitoring Report from 2007, prepared by a Danish consultant company “COWI”, when level of transposition of this Directive was only 8%. However, major steps were foreseen to take place until 2012. year, Transposition of UWWTD into RS Water Law and other regulation is 41%. The expected date of the complete transposition was 2012 in Federation, and 2015 in RS.

The Drinking Water Directive (DWD, 98/83/EC) is completely transposed into Federal Water Law and its regulations by 100%. The transposition in RS Water Law and regulations is also 100%.

The transposition of the Nitrates Directive (91/676/EEC) in FB&H has not yet been initialized. The definition of groundwater has been transposed in the Federal Water Law, which makes 52% of the transposition. For the remaining definitions and majority of provisions, transposition was foreseen through two Ministerial Orders, one of which is planned to be adopted until 2012, Full implementation of the Directive into FB&H laws and regulations is foreseen for 2018. Transposition of Directive in RS, through the elaboration of the new Water Law and supplementing regulations, is 22%. The remaining items were expected to be transposed through a Ministerial Order by the end of 2012. The full implementation was scheduled for 2012. However there is still work to be done on transposition of EU legislation, particularly by elaboration of missing sub-laws.

According to the EU Progress report for B&H for 2012. year, a small progress was made regarding the water quality. The Federation adopted a Water management strategy and a Rulebook on the conditions for wastewater discharges into natural recipients and public sewer systems, thus advancing the alignment with the Urban Waste Water Treatment Directive. Bosnia and Herzegovina aligned its legislation with the Drinking Water Directive, but implementation is slow.

No efforts were made to ensure a consistent and harmonised approach to water management at State-level and between the Entities and the Brcko District, including implementation of the water laws, monitoring and river-basin planning. Inadequate administrative capacity and lack of ready-made projects are causing considerable delays in sectoral investments. Access to drinking water, untreated discharges of wastewater and flood management remain key challenges.

2 INTERNATIONAL COOPERATION (BILATERAL, REGIONAL, INTERNATIONAL)

2.1. Existing bilateral and regional agreements

Bosnia and Herzegovina has signed several bilateral agreements relevant for water with Republic of Croatia, as following:

1. “Agreement between Government of Croatia and Government of Bosnia and Herzegovina ” on arrangement of water management relations”.

This agreement was signed in 1996. year in Dubrovnik, Croatia.

Agreement relates to the water management activities at the water streams which present the mutual state border between Croatia and Bosnia and Herzegovina, or at the water streams and groundwater bodies which cut with state borders. Agreement is also relevant for all areas of interest for improvement of water management of Contracted Parties (B&H and R Croatia).

According to this agreement, the Commission was formed for the implementation of this Contract (3+3 members). Until now, members of Commission from B&H side are only from Federation of B&H.

2. “Agreement between Croatian Government and Council of Ministers from B&H on common financing of maintenance and operation of regional sewerage system “Komarna- Neum- Mijetski Kanal”

This Agreement was signed in Sarajevo, 2004. year.

Agreement relates to the regional sewerage system which cover B&H and Croatian coastal settlements. Regional sewerage system was constructed during a period when Croatia and Bosnia were within the same state, and the share of financing was 30% from Croatian side and 70 % from B&H side.

3. Contract between World Bank, and Government of Croatia, FB&H and RS, as well as Memorandum of understanding between B&H and Croatia.

Contract was signed in Zagreb and Sarajevo 2008. year.

It relates to the WB grant for the B&H's and Croatia's common Project “ Managing of Neretva and Trebišnjica rivers”. Total grant was 8 mil. US \$, out of what 6 mil. US \$ is dedicated for B&H, and 2 mil. US \$ for Croatia.

Project should cover issues of water allocation, preservation of ecosystems and biodiversity, as well as reduction of pollution from sewerage systems in B&H's and Croatia's settlements and industries.

4. „Framework Agreement on Sava river basin (FASRB), “ between Slovenia, Croatia, Serbia and Bosnia and Herzegovina.

Agreement was signed in December 2002, at Kranjska Gora (Slovenia). Consequently, the Interim Sava Commission was formed to prepare all steps necessary for the establishment of the permanent Commission upon entry of the FASRB into force.

Upon all Parties ratified the FASRB, it entered into force on December 29, 2004.

The First Constitutional Session of the Sava Commission was held on June 27, 2005. The permanent Secretariat of the Sava Commission, located in Zagreb, started to work on January 09, 2006.

The Agreement, as well as Sava Commission activities, relate to the utilizing, protecting and controlling Sava River Basin water resources, in a manner that would enable better life conditions and raising the standard of population in the region, and to finding appropriate institutional frame in order to enhance the cooperation.

2.2. Perceived transboundary issues of concern

Most of B&H's major river basins are internationally shared what require strong attention to be paid to international water laws, arrangements, programs and projects.

The most interesting in international terms, out of alluviums aquifers are the catchments of Sava, Una and Drina rivers (northern and western part of B&H, bordering with Croatia and Serbia), while among karstic aquifers, the most important are catchments of Cetina river and Neretva and Trebišnjica rivers (southern and western part of B&H, bordering with Croatia and Monte Negro).

However, international groundwater considerations were in B&H, and still are, the second priority, after surface waters. Shared groundwater aquifers are generally neglected comparing to surface water in trans-boundary river basins.

Such situation resulted in very weak activities regarding ground trans-boundary arrangements, programs and projects.

2.3 Completed, on-going and planned international, bilateral or multilateral activities

Bosnia and Herzegovina is a member or contractor of the following conventions and agreements related to transboundary water: .

- **Danube River Protection Convention (1994).**

Since 1996 B&H is actively involved in the work of expert teams of the Danube River Protection Convention (representatives in the ICPDR and the expert groups AEW, MLIM, EMIS, ECO etc.). B&H ratified this Convention in January of 2005 (Official Gazette BiH 1/05).

- **UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (i.e.. Helsinki Convention)** was

adopted on March 17th, 1992 in Helsinki, and it was enforced on November 6th 1996. BiH approached the Convention by the end of 2009. The Decision of the Presidency of B&H on ratification of the Convention was published in „Official Gazette of B&H“ – International agreements No. 08/09.

- **Convention on the Transboundary Effects of Industrial Accidents**, was adopted on March 17th 1992 in Helsinki. It enter nto force in April 2000. B&h ratified this convention on 20th of February 2013.

- **Convention of Mediterranean Sea pollution protection, Barcelona from 16.02.1976.** (Enter into force: 12.02. 1978.; Official Gazette SFRJ-International Agreements, No. 12/77, Official Gazette BiH, No 26/98) and its Protocols:

1. Protocol for the protection of the Mediterranean Sea against pollution from land-based sources and activities – LBS Protocol, Atina, from 17.05.1980. (Enter into force: 17.06.1983.). Revised in Syracuse (Italy) 1996. (Official Gazette RBiH No 13/94, Official Gazette SFRJ IA No. 1/90).
2. Protocol concerning specially protected areas in the Mediterranean sea, Monaco, from 1996. (old name: Protocol on specially protected areas of Mediterranean Sea, Geneva 1982.) (Enter into force: 23.3.1986.) (Official Gazette RBiH No. 13/94 Official Gazette SFRJ IA No. 9/85)
3. Protocol for the prevention and elimination of pollution in the Mediterranean Sea by dumping from ships and aircraft, Barcelona from 16.02.1976. (Enter into force: 12.02.1978.)
4. Protocol concerning cooperation in combating pollution of the Mediterranean Sea by oil and other hazardous substances in accidental cases, Barcelona, from 16.02.1976. (Enter into force: 12.02.1978)

- **International convention on oil pollution prevention of sea, London, from 12.05. 1954. (Enter into force: 26.07.1958.) (Official Gazette RBiH No. 13/94, Official Gazette SFRJ IA No.60/73, 53/74)**
- **International convention on protection from ship pollution , London, from 02.11.1973. (Enter into force: 02.10.1983.) (Official Gazette RBiH No. 13/94, Official Gazette SFRJ IA No.2/85)**

2.4. Main achievements and obstacles and lessons learned

Bosnia and Herzegovina, as a relatively new post-war democracy is in the process of intensive transformations in terms of arrangements and regulations of water management on both, national and international level. Those transformations are mostly focused on legislation, capacity building and institutional strengthening, moving from pre-war Yugoslav legislation towards arrangements in line with international and particularly European Union guidelines. Some on-going processes in B&H such as ratifications of international agreements, implementation of cross-bordering projects and involvement in regional environment programs, described in Chapters 2.2. and 2.3., are likely to result in sound international arrangements in the future. Anyway, it is quite slow process in B&H caused by complex administrative structure, as well as low human capacities.

International cooperation in B&H reflects the deficiencies of the national internal administration. The distribution of competencies regarding international cooperation in B&H is extremely complicated granting the right to international initiatives even to Cantons. This results in considerable delays in coordination and difficulties in entering international agreements. Conflicts of opinion and/or unproductive legal debates prevented the clarification of B&H's status versus a number of international conventions/agreements.

Regarding human resources four phenomena become apparent. First, the very low number of genuine specialists in any of the environmental fields (waste, air-emissions, noise, nuclear radiation, etc.) Second, the low number of environmentalists compared with the number of chiefs. Third, the frequency of multi-functional occupation of environmentalists. Fourth, the significant gap between the number of posts established and the number of posts actually filled.

A strategy for international cooperation and implementation of commitments is yet to be formulated. The underlying defect is inability of the administration to oversee and manage Multilateral Environmental agreements. Good management would require a national strategy for international environmental cooperation, setting of priorities in view of the obligations, the estimation of the expected costs of implementation through the years, a cost-benefit analysis prior entering the international obligation, clarification of internal institutional responsibilities, and due reporting to the decision-making and supervisory state and entity bodies.

Despite strengthening of the state level (Ministry of Foreign Trade and Economic Relations – MOFTER), the weakness of national coordination and the elaboration of national concepts remains a visible problem.

EC Project “Functional Review of the Environmental Sector in Bosnia and Herzegovina” elaborated by the consultant “Agriconsulting” (2005. year), provided recommendations for strengthening environment sector in B&H. The first reform measure was “transformation of the present MoFTER’s Department for Environmental Protection into a new “Sector for Environmental Protection”. It is

proposed that the new sector consist of three departments, out of which one would be dedicated for international agreements:

- Department for EU accession and international agreements with the following tasks:
 - preparation and negotiation of international conventions and agreements in the environmental field;
 - assessment of the requirements and costs of implementation of international obligations;
 - monitoring of the implementation of agreements and conventions,
 - elaboration and upkeeping of a national strategy for international environmental cooperation;
 - designation and coordination of focal points for international cooperation;
 - coordination of due national reporting to all international fora;
 - preparation of documents and data for the various EU negotiations;
 - coordination of the approximation to the EU acquis of environmental law and policies, natural resource management and pollution control;

3 QUESTIONNAIRE ON IMPLEMENTATION OF THE GROUNDWATER MANAGEMENT ISSUES INTO NATIONAL (B&H) LEGAL AND POLICY FRAMEWORK

1. Is the national strategy for water management defined? Does it include groundwater?

F B&H¹ - Article 24. of Water Law of FBiH (“Official Gazette” of FBiH No. 70/06) prescribes that water management policy is defined by Water Management Strategy. According to the Water Law, first Water Management Strategy was supposed to be adopted in 2009. However, Water Management Strategy was prepared later on (in 2010) for the period 2010-2022 and adopted at the end of 2011 by Government of FBiH . According to the Water Law, Water Management Strategy of FB&H is a part of the Federal Environmental Protection Strategy.

It represents planning document which sets out the vision, goals and measures of FB&H policy in water management, including groundwater management. Water management Strategy defines different strategic and operational goals in respect to different fields in water management (legal, economic, institutional, water usage, water protection and protection of water).

RS¹ - According to RS Water Law (Article 25), it is foreseen that Strategy of integrated water management will be elaborated. RS has elaborated the “Framework Plan for Development of Water Management” in 2006. year, which provided strategic directions for development of water management in RS and defined criteria, conditions and limitations for development of water management. RS Strategy of integrated Water management up to 2024 was prepared in 2012 in the RS and is currently in the adoption phase. “Framework Plan for Development of Water Management” from 2006 was the base for this Strategy. RS Strategy of integrated Water management is a planning document which defines the model of strategic management planning, objectives and criteria for integrated water protection as well

¹ B&H consists of two governmental entities – Federation of B&H (FB&H) and Republic of Srpska (RS)

as principals of integrated water protection particularly important for selection of strategic orientations. It defines directions, priorities and measures with respect to water usage and protection.

If, yes, please specify the goals and requirements regarding groundwater

a. If yes, does it include goals for transboundary waters, particularly groundwater?

FB&H Strategy - The main requirements regarding groundwater were elaborated within following:

Water usage strategic goal - a) increasing of population coverage with public water supply systems (from 60 % to 80%). Groundwater ensure 85 % of drinking water. Operational goal - Rational water usage, protection and preservation of water resources planned for water supply of population. Measures: continual investigation works of present and potential water resources of drinking water, particularly focusing on underground water (inter- granular and karst aquifers).

Water protection strategic goal – a) achievement and maintenance of good quality of surface and groundwater due to protection of flora, fauna and users (population, economy). Operational goal – Elaboration of Water Management Plans for watershed areas of river Sava and Adriatic sea; Measures: Elaboration of methodology for determination of water body types and for characterisation of surface and ground water bodies; Defining of parameters of quantitative and chemical quality for classification of state of ground water bodies; Establishment of supervision system of surface and ground water quality derived from Monitoring program; Elaboration of river basin management Plans.

According to FB&H Strategy deadline for elaboration of first River Basin Management Plans is 2012.year, Operational goal - Decreasing of pollution load from urban and industrial waste water systems; Measures: Increasing of population coverage with public waste water system (from 33 % to 45%) and construction of WWTP; Operational goal - Decreasing of harmful and toxic substances from industrial facilities through application of polluter pay principle; Measures: Set –up of polluters register; Continual monitoring of effluent by polluters; Operational goal - Decreasing of pollution of surface and ground waters from dumping sites; Measures: Removal of dumping sites; Construction of environmentally sound landfills; Operational goal - Decreasing of pollution from agriculture, forest and traffic activities; Operational goal - Establishment of protected areas according to FB&H Water Law (and WFD) - Establishment and proclamation of areas for potable water abstraction - sanitary zones protection, protected areas for economically significant aquatic species, protected areas important for sport and recreation, areas sensitive to eutrophication and nutrients and relevant monitoring program, protected areas for habitats of aquatic and semi – aquatic species as well as establishment of data base on water bodies status (surface and ground waters).

RS Framework Plan - The main directions regarding groundwater were elaborated as following:

-Increasing of population coverage with public water supply systems by intensive use of ground water sources(particularly inter granular aquifers but also karstic aquifers). This requires securing of water quality by water treatment and water source protection measures as well as guiding the economic development in a way that these sources stay permanently preserved as recourses for drinking water.

-Increasing of population coverage with public waste water system and construction of WWTP for settlements over 5000 population, as well as for smaller settlements, if

it is necessary according to criteria for priorities selection (public health, drinking water sources protection, water protection and water courses protection).

Draft RS Strategy of integrated Water management up to 2024, put special emphasis on construction of sewage systems and waste water treatment Plants (WWTP) for agglomerations with population 5000 or more, i.e. on increasing the population coverage with the public waste water systems. This should also be applied for the smaller agglomerations, if proved to be necessary due to e.g. water source protection, protection of natural values e.t.c.. Strategy also put special emphasis on construction of WWTPs for bigger towns in RS but also for the settlements which affect accumulations and ecosystems.

b. If yes, does the Water Management Strategy comply with the requirements set in EU Water Framework Directive and of the Groundwater Directive?

According to the Progress Monitoring Report prepared by Regional Environmental Center (REC) for period 2009-2010, transposition of WFD into Water Law of FB&H is 90 % and in RS 99%. Ground Water directive was not considered as it was adopted after entities' Water Laws.

Nevertheless, the real scope and quality of transposition of EU legislation into B&H legislation will be estimated during the implementation of Stabilisation and accession Agreement, prior to what it would be necessary to enact quite amount of new sub – laws.

Transposition of WFD into Water Law in Federation, according to the Progress Monitoring Report related to transposition of EU acquis, prepared for period 2010-2011 by Hulla&Co. Human Dynamics KG is 90%. Transposition of WFD into Water Law of Republic Srpska is 99%,

FB&H Water management Strategy concentrates on fully transposition of EU legislation, mainly through the sub-laws, for which deadline were defined within FB&H Water Law. Strategy sets more flexible time frame, in accordance to the requirements of Stabilisation and accession Agreement (signed in 2008) which provide deadline of 6 years for full transposition.

FB&H Strategy sets the Legal Strategic goal - Water sector reform which comply with EU requirements in water sector and Operational goal relevant for groundwater - Full transposition of Directive 80/68/EEC in 2012; Full transposition of WFD in 2012;

RS Framework Plan stipulates that the key legal documents which should be considered while elaborating RS water legislation, within the process of harmonisation with EU water legislation, are the following Directives: ground water protection directive, surface water protection directive, fishing water quality directive, bathing water quality directive, urban waste water treatment directive, nitrate directive e.t.c.

c. Is it fully or partly harmonized with other sectoral related strategies (agriculture, environment, tourism ...)

FB&H Water Management Strategy represents a part of Environment protection Strategy. Water Management Strategy recognised lack of inter-sectoral cooperation (agriculture, protected areas, energy, physical Planning). Thus, Water management Strategy initiate inter-sectoral cooperation and sets institutional operational goal: Intensification of inter-sectoral cooperation (planning processes within different sectors to be based on inter-sectoral coordination) and introduction of IWRM principles in other sectors.

The goals of RS Framework Plan are that Plan serves as base for: elaboration of Development Strategy of RS, defining physical requirements for water infrastructure (Physical Plan of RS was not elaborated), elaboration of planning documentation of other sectors and to define interrelations of all water plans with requirements of physical planning and environmental protection.

d. If national strategy for water management was not defined, can you identify any long-term planning document which sets out the vision, mission, goals and tasks of state policy in water management, particularly groundwater management?

2. To what extent was performed transposition of European water directives, particularly the Water Framework Directive, new Groundwater Directive and Nitrate Directive into national legislation? What is the state of the implementation of these directives?

According to the Progress Monitoring Report prepared by Hulla&Co. Human Dynamics KG for the period 2010-2011, transposition of WFD into Water Law of FB&H is 90 % and into RS water Law is 99 %.

Transposition of the Nitrate Directive is still at an early stage. According to the above mentioned Progress Report, the last progress in FB&H was achieved by the adoption of Regulation on the designation of areas subject to eutrophication and nitrate-sensitive areas and Regulation on the monitoring of areas subject to eutrophication and nitrate-sensitive areas. The level of transposition of the Nitrates Directive (91/676/EEC) in FB&H is 52%.

As far as it concerns the level of transposition of the Nitrates Directive in RS, the elaboration of Water Law of RS, Decree on water classification and watercourses categorization and Regulation on wastewater discharge into surface waters are the major transposition measures. Some definitions are still to be transposed. It was expected that this will be accomplished through a Ministerial Order by the end of 2012. The level of transposition of Nitrates Directive in RS is 22%.

In the Progress Report there were no information about the level of transposition of the Ground Water Directive since the competent FB&H and RS ministries have not provided the ToC.

However, according to the FB&H Water management Strategy, there is still lot of job to be done, particularly related to the adoption of numerous sub-laws.

3. Can you explain how the “user/polluter pays principle” and the principle of recovery of the costs is promoted in the legislative framework of your country?

The Environmental Protection Law of FB&H (“Official Gazette of FB&H” No. 33/03) defines in article 11. User/Polluter pays principle, and Environmental Protection Law of RS (“Official Gazette of RS” No. 53/02, 109/05) also in article 11. defines User/Polluter pays principle. In these articles is precisely defined that polluter pays the costs for control and prevention of pollution regardless of the fact if the costs are the result of the imposed obligation for polluting emissions or certain economic mechanisms, or obligation arises from the regulations relevant for pollution reduction in environment. These articles further on define that user of the environment is responsible for all activities that might impact the environment. Article. 109 of

Environmental Protection Law of FB&H and article. 119 of Environmental Protection Law of RS defines that in case that operator performs the activity that can harm environment, the operator is responsible to reimburse the costs for damage assessment and recovery costs.

FB&H Water management Strategy supports application of cost –recovery principle in accordance to economic analysis (Appendix III of WFD) and polluter –pay principle. It sets economic operational goal: Sustainable financing in water management and full cost recovery from users or from other sources.

However, principle of cost recovery is not fully implemented nor in B&H regulations nor in water management practice as well. Application of the charges for the use and protection of water, in the way defined by the Water Law, is necessary to expand, taking into account the environmental and resources costs, which are not properly defined. Specifically, the economic value of groundwater is not clearly defined, especially in terms of defining and evaluating the different functions of a (ground) water environment.

RS Framework Plan sets guidelines for implementation of IWRM, including economic pre-requests i.e. policy of real prices which considers cost –recovery and pollution-pay principle.

4. Can you specify any legal or policy document containing provisions on integration of environmental and resource costs into the development of pricing policies?

There is no legal or policy document containing provisions on integration of environmental and resource costs into the development of pricing policies in FB&H or RS.

5. Has your country implemented the approach for defining (qualitative and quantitative) status of groundwater bodies, according to the WFD and GWD? Does it include:

- a. some specific provisions on karstic areas?

There are no specific provisions on karstic areas

- b. Provisions on the methodology for defining threshold values and/or groundwater quality standards, according to the GWD?

Water Laws of FB&H and RS contain provisions related to classification of the status of the groundwater bodies, according to the WFD, by monitoring of parameters for classification of the quantitative status and chemical status of ground waters.

The following sub-laws relevant for groundwaters are still to be prepared according to the Water Laws:

-The methodology for determining the types of water bodies for surface water and characteristics of water bodies for surface waters and ground waters.

-Parameters of the quantitative and chemical quality for the classification of status of the groundwater.water bodies.

6. What is the status of development of the national river basin management plans?

Article 25 of the Water Law of FB&H and Article 26 of Water Law of RS prescribe the obligation of development of river basin management plans for defined watershed areas. Relevant Water Laws contain a detailed contest and procedure of adoption of water management plans. Deadline for preparation of the first river basin management plans in FB&H and in RS is 2012. However, FB&H Water management Strategy sets more flexible deadline for elaboration of river basin Management plans - 2015 including program of measures.

Currently, river basin management Plans are in process of elaboration for: Rivers Krka and Cetina and Rivers Neretva and Trebišnjica.

7. Is the program of measures that will be applied within the river basin management plans already defined? If not, can you identify any legal or policy document in which such program of measures exists?

Water Laws of the FB&H and RS define that program of measures contains basic measures which are necessary in order to achieve objectives related to water protection, water management, water regulation, protection from negative impact of the waters as well as to water usage. Supplement measures are to be defined as well if necessary for good water status.

Water laws prescribes obligation of elaboration of program of measures and lists (very generally) basic and supplementary measures, that should be applied within the river basin management plans in accordance to WFD.

8. If existing, how the program of measures relates to the WFD requirements, specifically to the need for defining the basic and supplementary measures?

Program of measures does not exists yet..

- a. Can you specify the most important measures which are or are planned to be implemented for groundwater protection? -
- b. Can you specify whether and how the measures necessary to prevent or limit (direct or indirect) input of pollutants into groundwater are implemented? -
- c. Does the program of measures contains the obligation of controlling and reducing water pollution from point and diffuse sources of pollution? -

9. Do you think that the existing system of protection of the well fields and springs is good in your country, or it requires some changes?

According to the F B&H Water Management Strategy, the existing system of protection of the well fields and springs is not satisfactory. For number of water sources Decision on water source protection has not jet been adopted, and only for some of them protection measures are in place.

Similar situation is in RS as well.

a. Can you specify the legal base for the existing practice of groundwater protection in the karstic areas?

In FB&H, the Rulebook on determination of the conditions for definition of the sanitary protection zones and protective measures for drinking water sources used for public water supply ("Official Gazette of FBH", No. 88/12).

, defines the protection of ground water sources in karstic areas. This regulation was adopted on the basis of the Water Law of FB&H from 2006.. This regulation

prescribes very strict measures for protection of groundwater sources in the karstic areas.

In RS, Regulation on the protection measures and method of determining the sanitary protection zones as well as on areas where exist water sources, water management facilities and water for human utilization defines the above issues. («Official Gazette RS», No. 7/03).

b. Is the requirement for implementation of any kind of remedial measures in the zones of sanitary protection legally defined (e.g. implementation of BAT, removal of illegal facilities etc.)

Yes, regulations mentioned in question 9, point a., legally define the remedial measures in sanitary protection zones.

c. If yes, does it include also the remediation measures of contaminated soil and groundwater?

Yes, prescribed measures are described in details for each water protection zone (I, II III and IV). They are very strict and include measures of contaminated soil and groundwater. For e.g., in protection zone I, all activities which are not related to the normal functioning of the water facility are forbidden, and activities performed with the purpose of maintaining and enabling normal functioning of the water facility must not have harming effect on environment. Construction of industrial and other facilities is also forbidden in the protection zone II, and protective measures in the protection zone III are more flexible regarding construction, but still strict enough to prevent contamination of soil and groundwater, while the lowest level protection measures are in protection zone IV.

10. Are there any differences in the approach for groundwater protection in different types of aquifers? If yes, define main differences, related to:

a. the methodology of delineation of sanitary protection zones,

Methodology of delineation of sanitary protection zones is described in regulations mentioned in question 9, point a.

Regulation prescribes that the sanitary protection zones are determined depending on the type of aquifer, separately for aquifers with inter-granular porosity and separately for karst aquifers.

For aquifers with inter-granular porosity four zones of sanitary protection were prescribed: I, II III and IV: zone of highest protection regime, zone of strict protection regime, zone of limited protection regime and zone of preventive measures and limitations, respectively.

For the karst aquifers, the four above mentioned zones were prescribed as well. Generally, methodology of delineation of sanitary protection zones differ for inter-granular and karst aquifers, but is typically based for both aquifers on groundwater velocity and time of travel of flow to particular source.

For inter - granular aquifers: typically, border of I zone is provided by a fence that is placed at a distance of not less than 10 m from external contour of all structures within the water intake area. Border of II zone is defined from the outer border of the I zone to the line from which the groundwater flows at least 10 days up to water intake. Border of III zone is defined from the outer border of the II zone to the line from which

the groundwater flows at least 50 days up to water intake. IV zone is defined from the outer border of III zone to the border of hydro-geological watershed area.

For kars aquifers: typically, border of I zone is provided by a fence that is placed at a distance of not less than 25 m from external contour of all structures within the water intake area. Border of II zone is defined from the outer border of the I zone to the line from which the groundwater flows at least 1 day up to water intake. Border of III zone is defined from the outer border of the II zone to the line from which the groundwater flows at least 10 days up to water intake. IV zone is defined from the outer border of III zone to the border of hydro-geological watershed area.

b. the types of hydrogeological investigation needed for delineation of sanitary protection zones

Regulations mentioned under question 9., point a., prescribe that sanitary protection zones are defined depending on local conditions, determined by investigation works and expert study prepared by registered institution for such type of works. For the purpose of establishment of sanitary protection zones and protective measures B&H regulation doesn't contain further explanation on the types of hydrogeological investigation needed for delineation of sanitary protection zones in either type of aquifers

c. the measures applied in different types of aquifers.

According to the Regulation, protection measures generally depend on types of aquifers but they typically include: regular monitoring of water quality in water source catchment areas, construction and reconstruction of waste water and water supply systems, wastewater treatment, sanitary landfill sites construction, etc.

11. Is groundwater in the karstic area specifically treated in the national legislation?

Only in the context of sanitary zones protection (Point 9 and 10)

12. Are the areas intended for the abstraction of water for human use specified in the regulations or strategic documents? How they are treated:

- a. as whole groundwater bodies, according to the criteria set in the WFD, or
- b. as a sanitary protection zones around the well fields and springs?

Groundwater bodies were not yet defined in FB&H or RS regulations or plans. Classification of protected areas, specified in the relevant Water Laws of FB&H and RS, includes one out of five types of protected areas, which is, protected area for abstraction of potable water for human use. Protected area for abstraction of potable water is defined as area in which is located water source which, according to its capacity and quality, might be used or is already used for public water supply. The Laws define that these sources must be protected from pollution and other negative impacts on health characteristic for potable water and on capacity of the source. On this protected area, water source protection is performed by defining the sanitary protection zones (sizes, borders, regimes etc in accordance to Regulation mentioned in point 9a).

Relevant by-laws (regulations mentioned in point 9a) treated those protected areas as a sanitary protection zones, but the zones "technically" cover the whole catchment area of the source (surface and underground catchment area).

13. Can you identify any other types of groundwater protected areas in your country, which are legally defined (other than the “Drinking water protected areas” (DWPA) or sanitary protection zones, which are specified in the WFD)?

According to the Article 69. of Water Law, beside the protected area for abstraction of potable water, Water Agency can determine protected areas with inland water reserves regardless of their future usage. These areas are determined in accordance to defined reserves of inland waters which are classified in to highest rang, taking into account their chemical, physical-chemical and microbiological characteristics. On the proposal of Water Agency, regulation could be adopted for restriction of occupation of space and limitation of activities which could endanger qualitative or quantitative characteristic of inland waters.

According to the Article 70. of Water Law (temporary protection), for the water source which could be significant for future water supply, usage of mineral, thermo mineral or other ground water source, Water Agency propose adoption of regulation on temporary protection of the area in which the source is located. Regulation define borders of protected areas, temporary water protection regime, financing model of protection, maintenance of the area and supervision of regime implementation. This regulation is implemented until the adoption of Decision of water source protection.

14. In what way is defined (within legislative framework) the need for inclusion of sanitary protection zones and other protected areas in the spatial planning documents?

FB&H Law on physical planning and Land use (“Official Gazette of FB&H” No. 2/06, 72/07, 32/08, 4/10, 13/10, 45 /10) defines that Spatial plan of FB&H determines particularly basic principles of spatial planning, protection, usage and land use as well as the areas of importance for Federation B&H. Further on, this Law prescribes that the performer of the planning document shall prepare a document in accordance with the Law, the Decree on unique methodology for the development of physical planning documents, regulations issued there under, the decision on preparation of documents and other regulations and information relevant to the area for which the document is prepared. Accordingly, this defines the need for inclusion of sanitary protection zones and other protected areas in the spatial planning documents. Mentioned Law also contains provisions related to establishment of information system with relevant data and information for all territory of FB&H, including data on natural resources with its qualitative and quantitative characteristics.

The Law on Construction and spatial planning if RS (“Official gazette of RS” No. 40/13) in the simmilar way defines the need for inclusion of sanitary protection zones and other protected areas in the spatial planning documents.

15. Can you identify the legal base (e.g. law or rulebook) for establishment of groundwater monitoring?

- a. If yes, does it include clear criteria related to:
 - i. Conceptual model of groundwater system
 - ii. Representativeness of the monitoring places
 - iii. Selection of parameters

- iv. Integrated monitoring requirements (e.g. in the case of proved hydraulic connection between surface waters and groundwater)
- v. Frequency of sampling etc.

Relevant articles of Water Law of FB&H and RS contain provisions which define that authorized Water agencies are obliged to organize groundwater monitoring.

FB&H Water management Strategy set *water protection operational goal* – Elaboration of river basin management Plans and related measure - establishment of supervision system for surface and groundwater quality which will be derived from Monitoring Program (until 2014 year) - according to the Annex 5 of WFD Development of surface and ground water monitoring program - monitoring of chemical status of ground waters .

RS Framework Plan stipulates necessity of improvement of the water quality and quantity monitoring.

16. Does your national legislation include provisions regulating GW abstraction (quantity) such as permits systems, control on wells, and control on well drillers? Specify.

Water Law of FB&H and RS contain provisions which generally define the abstraction of water through the permits system.

Abstraction of water from the wells and ground waters, except for general use (use which does not consider any specific facility for abstraction, use on private property which consider basic water needs of one household, recreation use ...), can be approved only after performance of the water investigating works. All legal and private subjects which abstract raw water, except for general use, are obliged to register the amounts of extracted water and to deliver those data to the authorized Water agency as well as to obtain water permit.

4 NATIONAL (B&H) SWOT ANALYSE

Strengths	Weaknesses
Good availability of water resources (intergranular and karst aquifers) v.s. water demands for human and economy activities	Low level of water supply coverage and services
Potential for economic development (hydro-energy, agriculture...and recreation activities	Low level of waste water coverage and services and WWTPs
Skilled experts for technical aspects of water management	Low level of implementation of water sources protection measures within sanitary protection zones
Water sector reform according to EU principles and legislation accepted and underway	Lack /missing of water quantity and quality monitoring, particularly ground water
Transposition of EU legislation under way (elaboration of sub-laws)	Slow progress in water sector reforms due to: -complex institutional set-up (two governmental entities and 10 cantonal entities in FB&H)
Water Laws of FB&H and RS contain	-lack of human capacities in

System

<p>provisions related to classification of the status of the groundwater bodies</p> <p>Elaborated Water management Strategy in compliance to EU principles</p> <p>Established institutional set-up for managing water at river basin level</p>	<p>administration (water lawyers, environmental engineers, water economists...)</p> <p>-Inter-entity cooperation related to elaboration and implementation of river basin management plans and relevant sub-laws is optional</p> <p>Slow progress in transposition of EU legislation, particularly in preparing sub-laws (ground water Directive not yet transposed, sub-laws relevant for ground waters are still to be prepared)</p> <p>Slow progress in preparing river basin management plans with program of measures (not any river basin management plan completed)</p> <p>Principle of cost recovery only partially implemented in water management practice</p>
<p>Opportunities</p>	<p>Threats</p>

<p>Inclusion of B&H into EU integrations</p> <p>Technical and financial support to water sector reforms by international community, particularly EU funds</p> <p>Promotion of investment in the field of wastewater collection and treatment for large and small agglomerations as well as for drinking water supply systems</p> <p>Improving program of groundwater monitoring taking into consideration the requirements of EU directives</p> <p>Criteria for determining good chemical and quantitative status need to be properly defined in river basin management plans</p> <p>Initiation of institutional effort for support of better communication between decision-makers and legislators and water scientists and experts working on national or international scientific or professional (ground)water projects</p>	<p>Lack of human resources and financial means for fulfilling policy requirements</p> <p>Sustainable financing in water management</p> <p>Impact of climate change on (ground)water resources is not adequately considered in national regulations and policies</p>
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