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Water Resources Protection and Water Management Framework in Western Balkan Countries in Drina River Basin

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Abstract: This paper aimed to point out not only the main sources of water pollution in the Drina River basin, but also the inevitability and importance of an integrative transboundary solution to water management issues, thus maintaining good quality surface and underground water in the context of overall environmental protection and health. This paper did qualitative research of existing water protection situation and made a top-bottom analysis, ranging from European to national, regional, and local levels, using geospatial and geosystemic differentiation analysis methods of spatial-temporal contents. It was concluded that bilateral cooperation agreements between countries in the basin should be reached to eliminate the causes of water pollution and possibly restore water quality.

Keywords: Drina River; Ecology; Water resources protection; Waste; Water management; Western Balkan

1. Introduction

Natural processes occurred on Earth on a global scale without limits on borders or regions. When access to drinking water is becoming one of the most important issues today, integrated water management is one of the tools of sustainable development and environmental protection. The Global Environment Facility (GEF) and the World Bank (WB) supported the Drina River Basin Management Project (WBDRBM) in the Western Balkans within the framework of integrated water resources management (IWRM) and management of global climate processes in coastal countries, namely, Montenegro, the Federation Bosnia and Herzegovina, the Republic of Srpska and the Republic of Serbia. Due to transboundary obstacles in water protection in the basin, it is necessary to prevent, control and reduce water pollution. This paper proposed the inevitability and importance of an integrative transboundary solution to water management issues, thus ensuring ecologically sound and rational water management, conservation of water resources and environmental protection.

2. Literature Review

Drina River basin has great potential, such as preserved natural environment, specific series of natural conditions (terrain, climate, water, protected natural resources, diverse living world, etc.), surface and underground water, hydropower, drinking water supply, irrigation, forest vegetation, which all together require specific protection treatment. Due to special and natural values, the Drina River basin was protected by the most important activities and actions in the past [1-4].

Regardless of measures and protection activities implemented, the pressure on use of natural resources increased because of both significant changes in space and legislative changes in planning, construction and environmental protection. Water resources primarily involve clean water. With the aim of sustainable water use, flood mitigation and environmental management, the World Bank initiated the project "Support to the Water Resources Management in the Drina River Basin", which covered three states in the basin, namely, Bosnia and Herzegovina (Federation BiH and the Republic of Srpska), Montenegro and the Republic of Serbia. Natural pollution sources in the Drina basin inevitably affect degradation of natural environment and increase of the amount of floating wastes [1-7]. "*The concept of the hydrographical basin as an instrument for water resource management has made its mark internationally over the past fifty years and the development potential of transboundary river basins and lakes has emerged as a cornerstone for international cooperation. The principle of international freshwater management addresses problems related to water resources and services through an integrated approach that considers a basin as a single management and planning unit. As a matter of fact, integrated water resource management is also an instrument of trans frontier co-operation, promoting dialogue and creating common interests among each basin's coriparian states, linking a number of vital activities within an international basin*" [4].

The Drina River basin, its riverbed and hydroelectric power plants on the longitudinal flow profile have generated a variety of wastes. In order to improve and protect the environment, environmental protection needs to take proper waste management into consideration, because such wastes can cause adverse effects and change the physical, chemical and biological properties of the environment, resulting in water, air and soil pollution. An important goal is to reduce the source and amount of wastes, which occurs in the technological process, and recycle them as raw materials or energy, thus improving environmental protection along with economic effect [8-13].

In the Drina River basin, a large number of ores and deep pit mines have disturbed the aesthetic environment and initiated far-reaching and complex degradation processes. A significant proportion of environmental degradation is underdeveloped urban dumps, landfills in rural settlements and along riverbeds, and traffic roads. Special geological structure leads to active landslides, which get worse with anthropogenic influence, such as heavy exploitation of forests and unplanned construction of technical and social infrastructure [11].

Water flows with no political boundaries, which significantly limits the management scope made possible by institutional frontiers. Moreover, the complex physical, political and human interactions within international river basins make the management of these shared water systems particularly difficult [4-7].

This paper aimed to indicate the importance of timely water resources management, thus meeting the needs of present population without threatening future generations.

It is necessary to prevent, control and reduce water pollution, which can cause transboundary impact. That is, use of transboundary water should ensure ecologically sound and rational water management, conservation of water resources and environmental protection [4-6].

3. Methodology

When developing the possibility of shared transboundary water protection and management in the Drina hydrographical basin, this paper did qualitative research of existing water protection situation and made a top-bottom analysis, ranging from European to national, regional, and local levels, using geospatial and geosystemic differentiation analysis methods of spatial-temporal contents, thus becoming part of water integrated strategy management in the Drina River basin. Information is mainly from European and national documents, studies, reports, communications, legislation, and institutions' websites.

4. Results

4.1 Natural Conditions

4.1.1 Hydrology

The Drina River is a tributary of the Sava River, which is the largest tributary of the Danube River when flowing near Sremska Raca and provides the largest volume of water for the Danube River which drains into the Black Sea [8].

The Drina River basin has an area of 19,680 km^2 and covers three neighbouring states, Montenegro, BiH and Serbia. The Drina and its tributaries Tara and Piva, originate in the high karst area in central Dinarides, i.e., Scepan field. The Drina River belongs to the Black Sea basin and flows from south to north with many tributaries, such as Sutjeska, Bistrica, Prača, Drinjača and Janja, which are large tributaries on the left, and Ćehotina, Lim, Rzav, Ljuboviđa and Jadar, which are large tributaries on the right [8].

Water regime of the Drina River belongs to snow-rain regimes. The river reaches the maximum water level in April and the second largest water level in December. Large flows are caused by the passage of upper flows through high mountains of the Dinarides, which are characterized by heavy precipitation and snow melting. Before dams were constructed, the Drina was known for its occasionally extremely high-water level, which once reached 9500 m^3/s in the middle course. There are three hydropower plants (HE) on the Drina, Višegrad, BajinaBašta and Zvornik. The division of territory within the Drina River Basin (DRB) and the geographical determination is shown in Figure 1 [8].

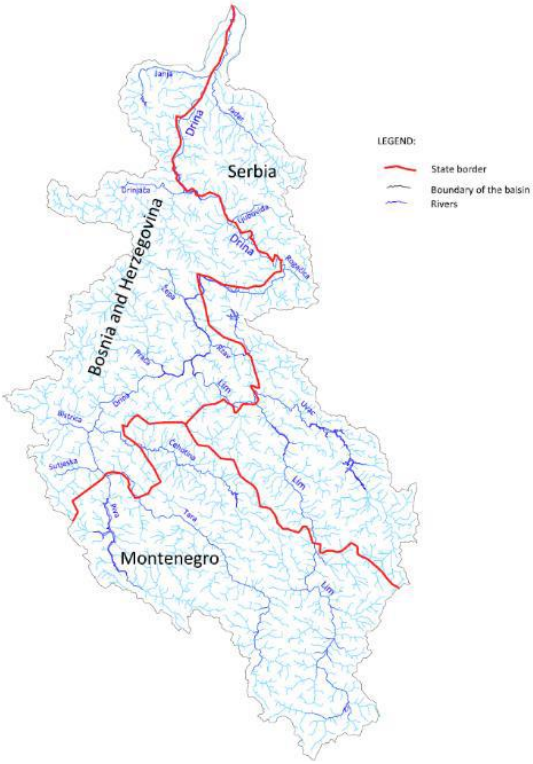

Figure 1. The hydrographic network of the Drina River Basin
Source: Support to Water Resources Management in the Drina River Basin crust [8]

4.1.2 Geology

Characterized by a block tectonic structure, the Drina basin is composed of three large and numerous small blocks and separated by fault cracks. The largest part lies in central Dinarides, which are made of Paleozoic and Mesozoic rocks. Only the Podrinje mountains Cer and Majevica belong to the inner Dinarides, where Paleozoic and Triassic rocks are mostly covered by Neogene and Quaternary sediments. The geological composition consists of Paleozoic slates, granites, andesites and gabbros. The basin has Triassic, Jurassic and Cretaceous limestones and dolomites, probably because of the tectonic evolution of this area, which is represented by blocks of the continental crust [1, 8].

4.2 Water Quality and Pollution

Excluding anthropogenic influence, water in nature is not completely pure. According to the longitudinal and deep-water profile, water contains various mineral and radioactive substances, microorganisms, and dissolved gases. Watercourses transport significant amount of suspended particles and floating layers with energy. Atmospheric water in nature is the pollution source of acid and yellow rain. Wastes in the Drina River basin can be divided into:

- floating surface (plastic, rubber, wood, animal waste);
- suspended waste (soaked containers made of wood, rubber and plastic);
- precipitated mobile layer at the bottom of the flow (a mixture of various types of soaked waste related to sludge).

Natural pollution sources in the Drina basin have inevitably aggravated natural environment and increased the amount of floating waste [12]. Soil erosion affects the genesis of waste and causes accumulation of suspended materials and formation of sludge. Denudation processes destroy and reduce surface humus and vegetation cover, which reduces water quality and increases the amount of silt. As a result of intense rainfall, water overflows from riverbeds, resulting in deposition and movement of sediments, and reduction of volume of lake reservoirs at hydroelectric power plants. Precipitation washes off artificial fertilizers and pesticides, while pronounced heat of the sun loosens the vegetation cover, which reduces the amount of water, changes its chemical composition and introduces new pollution. The orographic characteristics of the Drina basin are favorable to the formation of river sediments and the direct introduction of floating waste, as well as the winds that carry different types of waste into the river flow. Biodegradable natural material, which causes deposits to accumulate on shores and hydroelectric power plants, does not have a negative impact on the environment. Soil erosion and material transport are natural phenomena and are beyond anthropogenic influence, which can be positive or negative.

Anthropogenic factors creating floating waste are mainly caused by technological development, which has a pronounced human influence on environmental degradation. Sources of anthropogenic pollution in the Drina River basin include landfills, metallurgy, energy, chemical industry, extraction and processing of mineral raw materials, agriculture, and roads. The coastal zone is a place of waste disposal due to people's wrong habits [12].

During the spring and autumn floods, the coastal area is flooded, and wastewater reaches the river's watercourses and is disposed of on natural or artificial obstacles. Due to the increase of water level, garbage is dumped on the trees along the coast. In the Drina River basin, some landfills do not meet sanitary conditions and exceed ecological standards, though they are located in the coastal area in the city center. People's carelessness has caused some "wild" landfills. For example, landfill Šekovići is a few kilometers upstream from the urban settlement on the Drinjača riverbank, whose waste ended up on the streets of the city and on the highway in the floods of 2014.

Tons of garbage and waste float along the Drina River bed all the way to the dam near Visegrad, creating a large garbage island. Natural landscapes and straits have become landfills of plastic, bags, wooden assortments, rusty barrels and bottles. Floating waste has been found in the watercourse at all levels, with the largest amount in lake reservoirs near hydroelectric power plants. Heavy and dirty waste moves to the bottom and settles there, and the waste visible is only part of the waste. In the reservoirs of hydroelectric power plants, part of the waste remains on the surface, part remains at the bottom, part goes over the spillway over the power plant and continues to move, and part is cleaned. These cycles are repeated periodically. When the waste is removed from the water, it involves its proper disposal. Natural environment of the watershed is most threatened by anthropogenic influence, where human ignorance damages the overall biodiversity and hinders sustainable development as well as touristic valorization of numerous natural and anthropogenic values. Floating surface visible waste is shown in Figure 2 is only part of the current state of the amount of waste [12].

Figure 2. Tons of waste dumped in poorly regulated riverside landfills or directly into waterways, ending up accumulating behind a garbage barrier in the Drina River. (AP Photo: Armin Dugut)

If water is used to supply households, the sources must be specially monitored, and special water supply protection zones defined and established. Major polluters along the Drina River are concentrated, with industrial plants and urban units discharging and collecting pollutants in one place. Such concentric waste consists of:

- municipal pollution sources: atmospheric and fecal water, technological and sanitary water insufficiently purified by the main collectors come into the river, which are the main recipient for waste;
- industrial pollution sources: numerous different industrial facilities along the Drina River discharge polluted water, such as mine and smelter of non-ferrous metals in Zajača, antimony mine in Stolice, Bauxite mine in Milici, alumina factory in Zvornik, lead and zinc mine in Sasama, numerous facilities in the food industry, and wood stocks releasing poisonous phenol;
- agricultural pollution sources: rinsing of mineral fertilizers and various pesticides in agricultural production leads to increased concentration of nitrogen, potassium and pathogenic microorganisms, resulting in algae growth;
- pollution sources of solid waste dumps: numerous wild dumps on the right and left bank of the Drina River create floating waste.

According to Republica Srpska's legislative acts (SG RS, No. 50/06), which are largely consistent with that of the Republic of Serbia, the ecological status of surface water is determined by three groups of quality indicators, biological, hydro morphological and physical-chemical status. The ecological status of natural (unchanged) water bodies is classified as: excellent (I), good (II), moderate (III), weak (IV) and poor (class V). The chemical status of water bodies is assessed based on monitoring results and dividied into two types, good status or having not reached good status. Industrial production reduced during and after the war between 1992-1995, which was favorable to improving water quality. According to several studies, which were related to ecological and chemical status of water, the water quality in the Drina River Basin was defined as moderate or good quality status.

Quantity of collected floating waste in the accumulation in Visegrad is shown in Figure 3.

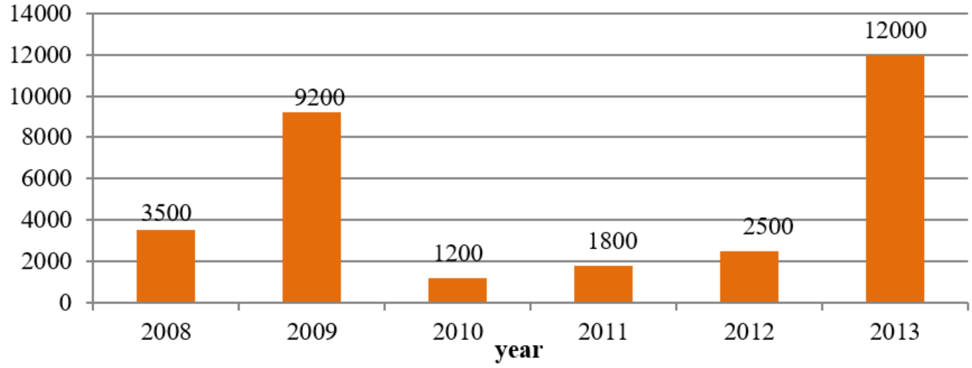

Figure 3. Quantity of collected floating waste on the accumulation in Visegrad (m^3)
Source: Study - Technoeconomic analysis of floating waste management in the economy Drina-Lim hydroelectric power plant, EPS Serbia, Belgrade, 2015 [9]

4.2.1 Analysis of positive experience in preventing environmental damage

The EPS Serbia study systematically analyzed positive world experience in the following areas [9]:

- prevention of waste generation;
- prevention of waste transport;
- extraction of waste from accumulation and river flow;
- storage of collected waste;
- waste disposal.

Floating waste of natural origin is dominant in developed countries. Due to low standards and lack of infrastructure for storage, disposal or recycling, the waste of anthropogenic origin is dominant in developing countries. Prevention measures for waste transportation involve directing waste to suitable and accessible places for collection and preventing waste disposal at potentially suitable sites where the waste stops, such as hydroelectric power plants, bridges, locks and islands. Obstacles for collecting waste are set at places that are adapted to the geomorphological characteristics of the flow. The obstacles should meet technological conditions and neither prevent the normal course of flow nor interfere with navigation. The most common obstacles include floating and fixed dams, cages, nets, switches and retarders. Waste is also collected by dedicated vessels. Floating waste is extracted from water with specialized mechanical cleaners, such as hydraulic, rope and chain cleaners.

According to the integrated water resources management report by state institutions of the Republic of Serbia, Montenegro and BiH, it is important to make investments in hydroelectric infrastructure and make an environmental protection plan at the same time. As a separate segment, it is compulsory to protect the environment from water pollution. Destructive elements for the catchment area include flood waves, eruption of underground waters, troughs, erosion, and debris materials, which must be eliminated by timely regulation of riverbeds, estimation of changes in flow and climate analysis. Thus, the priority task is to ensure "environmentally acceptable flow", which implies the flow necessary to maintain water quality does not endanger the ecosystems in the river basin. Such an approach and basin state are a positive basis for meeting the social needs, which can manifest itself in order to develop ecotourism [12].

4.3 Transboundary Obstacles in Water Protection

Water protection implies analysis of sediment management, i.e., monitoring ecologically acceptable water flow and quality. The problem is that the monitoring methodologies of water quality are not consistent in all countries [8].

Sediment monitoring in the Drina basin is therefore rated as poor, with a small number of measuring stations. Some countries even have no sediment monitoring. It is necessary to increase the number of those stations.

Ecologically acceptable flow (EPP) is considered as the minimum water flow necessary to maintain the health of river and ecosystem, i.e., environmental protection. The methodologies proposed in Bosnia and Herzegovina, Montenegro and Serbia are used to calculate the minimum ecologically acceptable flow based on hydrological data (Figure 4).

MNE	FBiH	RS-BiH	Serbia
Addendum of the Rulebook OG n°2/16	Rulebook OG n° 04/13	No Rulebook	No Rulebook
$mEF = \begin{cases} mQmin & \text{for } mQ_M(j) / mQ_{min} < 10 \\ 0.2\, mQM(j) & \text{for } mQ_M(j) / mQ_{mi} \geq 10 \end{cases}$ Based on at least 10 years of hydrologic data : mQ_{min}: Mean of the minimum annual values of the mean daily flow $mQ_M(j)$: Mean of the mean monthly flow for the month j	$Q_{epp} = \begin{Bmatrix} 1{,}0 \times {}_{sr}Q_{min} \text{ za } {}_{sr}Q_{DEK(j)} < Q_{sr} \\ 1{,}5 \times {}_{sr}Q_{min} \text{ za } {}_{sr}Q_{DEK(j)} \geq Q_{sr} \end{Bmatrix}$ U slučaju, kada je ${}_{sr}Q_{min}$ 0, ili ${}_{sr}Q_{min} : Q_{sr} < 1:25$, Q_{epp} će se proračunati na temelju slijedeće jednačine: $Q_{epp} = \begin{Bmatrix} 0.1 \times Qsr \text{ za } {}_{sr}Q_{DEK(j)} < Q_{sr} \\ 0.15 \times Qsr \text{ za } {}_{sr}Q_{DEK(j)} \geq Q_{sr} \end{Bmatrix}$ U slučaju kada se ne raspolaže dekadnim vrijednostima protoka Q_{epp} će se proračunati na temelju slijedeće jednačine: $Q_{epp} = \begin{Bmatrix} 0.1 \times Qsr \text{ za period svibanj - listopad} \\ 0.15 \times Qsr \text{ za period studeni - travanj} \end{Bmatrix}$ Qepp=mEF Based on at least 10 years of hydrologic data : $Qsr=mQ_M$:Mean of the mean annual flow $srQmin=mQ_{min}$ srQDEK(j)=Mean of the decade flow for the month j	$mEF=Q_{95\%}$* $Q_{95\%}$: Mean flow exceeded with a 95% probability *In practice till new bylaw will be established	$mEF=0.1Q_M$* Q_M: Mean Flow *In practice till new bylaw will be established

Figure 4. Minimum environmental flow (EF) hydrological methods of countries in the DRB
Source: Support to water resources management in the Drina River basin project – Roof Report [8]

This paper proposed to harmonize the values and methods applied in the entire Drina basin [8].

Water quality of the Drina River is the best on the profile near Bajina Bašta, compared with three downstream profiles (Ljubovija, Jelav and Badovinci, with only Badovinci profile measured in recent years) measured by the RHMZ, based on the Report on Water Quality in 2006 and the Status of Surface Waters of Serbia in 2015 and 2016, as well as measurements in the previous period.

In generally, water quality of the Drina River in the first decade of the 21st century was class II on the Bajina Bašta and Ljubovija profile, which is the required class for this river. However, the water quality was class II/III in Jelav and Badovina, which was worse [13].

In the period 2015-2016, the situation was similar. Water quality of the Drina River was good and better near Bajina Bašta, which was better than that in Badovina downstream, where the water quality was moderate and threatened due to increased chemical and organic pollution.

The watercourse had moderate organic pollution according to saprobiological tests of water quality on the profiles of Bajina Bašta and Badovinci, and earlier on that of Ljubovija and Jelav. During the test periods, it was observed that silicate algae was the biggest pollution. The saprobity index moved within the β-mesosaprob zone, i.e. water quality was class II, except in the spring period. Water quality was class I/II on the Bajina Bašta profile. Assessment of ecological status/potential of watercourses based on physical and chemical elements of quality Drina and Sava water area, in 2015 and 2016, are shown in Table 1.

Table 1. Assessment of ecological status/potential of watercourses based on physical and chemical elements of quality in 2015 and 2016

Watercourse	**Drina River; Sava Water Area; 177.25 km from estuary, basin area 14,797 km^2; water quality testing since 1967**	
Station name	Bajina Bašta	
	2015	2016
pH value 8.56 8.26	8,56	8,26
Dissolved oxygen (mgl-1)	10,67	9,12
BOD5 (mgl-1)	1,02	1,10
Total Organic Carbon (TOC) (mgl-1)	3,4	3,7
Ammonium ion (NH4-N) (mgl-1)	0,10	0,08
Nitrites (NO2-N) (mgl-1)	0,009	0,007
Nitrates (NO3-N) (mgl-1)	0,50	0,50
Total nitrogen (mgl-1)	0,7	2,4
Orthophosphates (mgl-1)	0,024	0,019
Total Phosphorus (mgl-1)	0,040	0,032
Chlorides (mgl-1)	2,5	2,5
Assessment of ecological status / potential	good and better	good and better

Source: Status of surface waters of Serbia in 2015 and 2016 - Ministry of Environmental Protection - Environmental Protection Agency 2018

The water quality meets requirements and is good based on a comparative analysis of SWQI4 index.

Water quality of reservoirs - The Bajina Bašta reservoir belongs to the group of priority reservoirs in Serbia where the RHMZ tested water quality.

Water was sampled in the Bajina Bašta reservoir by the RHMZ near the dam at three points with different depth, namely, A-1 (0.5m), A-2 (12.0m), A-3 (25.0m), and at three points with different depth in the middle of the lake, namely, B-1 (0.5m), B-2 (6.0m), B-3 (12.0m) [13].

According to the physical and chemical analysis results of water samples, a low value of water oxygen saturation (oxygen deficit) was found in point A-3 (class III), while elevated concentration of dangerous and harmful substances was not registered.

Groundwater quality endangerment in the researched area is caused by groundwater abstraction, such as springs and well water, mostly by local people on a much smaller scale for commercial facilities. Due to the small population and the small number of households in this area, we cannot talk about the problem of over-pumping threatened by a large population. However, this is a special problem of "wild" capturing water sources, because there is no registered data. The terrain is made of rocks with different hydrogeological properties, and the pollution conditions of the subterranean areas are also different.

Groundwater pollution is mainly caused by inadequate treatment of septic tanks in all rural settlements and liquid and solid waste from livestock farms, illegal depositing waste in river valleys, mineral fertilizers in agriculture, as well as illegal construction. Most settlements have permeable (absorbent) septic tanks, while newer buildings have air-tight sanitary septic tanks that are periodically cleaned.

Solid waste is disposed by individual sector in immediate vicinity of homesteads and in garbage pits. Most local people often bury dead animals in unorganized land areas. There is a problem in the choice of these locations, because it is not guided, and vulnerability of the substrate is not sufficiently considered. That is, decomposition of these wastes and their infiltration through storm water may contaminate groundwater. Uncontrolled escrow waste in the vicinity of watercourses also pollutes underground water resources. Formation of landfills in river valleys represents a direct danger to sensitive aquifers in salluvial plains [13].

Due to lack of information on the amount of fertilizers used in agriculture, it is assumed that the quantity is not large and cannot significantly endanger underground water.

Considering geological structure of the terrain, and good quality and reserves of groundwater, special water sources protection regimes are required in order to preserve this state.

Water quality classification in the Drina basin is shown in Table 2. The methodology used to determine the ecological and chemical status of water bodies in Serbia is formulated in the Rulebook on ecological and chemical status parameters, quantitative status of surface waters and chemical and quantitative status parameters of groundwater (Official Gazette of RS, No. 74/11) [13].

Water classification in the three countries obviously needs to be harmonized in order to form consistent status of surface waters in the basin.

Table 2. Comparison of water quality classification in legislations of three countries

Serbia	BiH	Montenegro
Ecological status of surface water and ecological potential of highly modified water bodies (HMWB) is classified based on physico-chemical and microbiological indicators from Class I to V (excellent to poor)	FBiH: Since 2014, classification consistent with EU Directives	Classification based on permissible values of physicochemical and biological indicators according to the purpose of water usage: - Water used for drinking and food production (Class A, A1, A2 and A3) - Water for fish and shell production (Class S, W and C) - Bathing water (Class K1 and K2)
Chemical status is categorized as good or having not achieved good status, based on the content of priority, priority hazardous and other pollutants. Overall status/potential is classified as the worse.	RS-BiH: Five classes of water quality status (I to V) based on physicochemical, microbiological and hydro morphological parameters, which is not completely consistent with EU directives.	Water quality categorization: Class I: A1, S, K1 Class II: A2, K2, C Class III: A3

Source: Support to Water Resources Management in the Drina River Basin [8]

4.3.1 Transboundary collaboration

It is necessary for the three countries to develop and implement the Joint Water Management Project of the Drina Basin, namely, Republic of Serbia, Bosnia and Herzegovina (the Republic of Srpska and Federation BiH), and Montenegro. Despite the three countries are signatories to the most important multilateral agreements of water resources management, they have large insurmountable disagreements, which requires time to harmonize the adopted strategic plans and methodologies used for common water resources. Although the three countries do not have bilateral agreements to regulate issues concerning water resources management, they have started bilateral cooperation. The multilateral agreements include the *Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes* and the *Sofia Convention on the Protection and Sustainable Use of the Danube River*, the *Espoo Convention* and the *Aarhus Convention*, as well as the agreement on the Sava River basin, which are different in status [1-8].

In addition, due to unpredictability of consequences of climate change, water resources management tasks need to be better organized to take prevention measures and respond in emergency situations and more intensive cooperation between competent institutions is required. The priority is to harmonize strategic documents in the field of spatial planning and water management. It is necessary to take into account the harmonization of differences in planning the use of hydropower potential. Use of existing potentials must also be regulated by agreement.

5. Conclusions

Taking into account sustainable water use and environmental management and the support from the World Bank for more efficient water management in the DRB, it is necessary to start or intensify activities to reach bilateral cooperation agreements between countries in the basin, thus achieving and maintaining good surface and underground water quality, eliminating the causes of pollution and possibly restoring water quality [1-3, 5, 6, 8]. Surface and underground water contamination may be reduced by developing a municipal wastewater collection and purification system. Pollution caused by industrial activities can possibly be reduced with better wastewater treatment technology.

Water pollution reduction requires the planning for urban wastewater collection system and wastewater treatment plants. If pollution caused by industrial activities is reduced, this may improve wastewater treatment, restore solid waste landfills, better manage solid wastes, and completely comply with adopted laws.

In addition, management of the Drina River basin should ensure several important areas are still ecologically intact, some of which are part of Natura 2000. Complete Drina River basin is a challenging task and effectiveness of adopted measures largely depends on cross-border and regional cooperation, individual harmonization from local to national level, and additional harmonization of certain national priorities in the Drina River basin [8, 14-21].

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

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Conflicts of Interest

The authors declare no conflict of interest.

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