

Water in the Life of the People of Bosnia And Herzegovina

Ahmet Hadrovic

Faculty of Architecture, University of Sarajevo, Sarajevo, Bosnia and Herzegovina
hadrovic.ahmet@gmail.com, ahmet.hadrovic@af.unsa.ba

Abstract: *The author's most intense experience with water is related to the period of the siege of Sarajevo (during the 1992-1995 war), when the search for water was a function of sustaining life and often ended in death from snipers or grenades. However, the siege of Sarajevo was at the same time the reason for the realization of ingenious utilitarian solutions (watermills, mini-power plants 'for one light bulb, TV and fridge'...). After the war (1992-1995), the author noticed a large number of new faucets that were built by individuals, companies and social communities (the state), first in the vicinity of Sarajevo, and later throughout Bosnia and Herzegovina. The performances of some Czechs (not by their price but by the immediacy of their intention and message) are at the same time deeply personal and timeless, since they emphasize the best of the human essence. The author has a particularly intense emotional, human and scientific experience from performances at major world scientific symposia and conferences where water was the only or part of a wide spectrum of topics related to the present and future of planet Earth and man. In the last ten years, the author has cruised through Bosnia and Herzegovina, personally 'getting to know water' in its various forms and 'symbiosis with man'.*

By presenting his own experience and experience of water through this work, the Author remained convinced that he represents Bosnia and Herzegovina and its people in the manner of their most sublimated essence that cannot be canceled even by wars.

Keywords: *Water, Man, Symbiosis, Bosnia and Herzegovina*

I. Introduction

Since its inception, man, with a continuous struggle for survival, has thought about himself and the world that surrounds him by asking many questions that have become the 'eternal questions' of man's essence in general:

Who is the man?

Where is he from?

Since when?

What is his place in the Universe?

Is it a given or self-generic being?

Where is he going?

How long will it last?

Man gives the answers to these questions constantly, over and over again, through religion, philosophy, science, art and his everyday practical actions. Man communicated his first answers to some of these questions with drawings carved into the walls of his first habitat, a cave, which he did not build but found in nature. In his 'cave phase of life' (Paleolithic) man is a hunter and gatherer of fruits. The abundance of water along with more or less spacious and fertile river valleys and convenient sea coasts, all compounded with other climatic advantages (especially the number of sunny days and temperatures), resulted in intensive agriculture that brought an abundance of yields, whose surpluses were exchanged for other products in open trade goods or 'cashed in' (turned into universal goods, into gold). Cities were created as the physical embodiment of complex interpersonal relationships, and in them a large number of the most diverse buildings, as a physical framework for a more or less wide range of human needs. Aware that water is the basic prerequisite for his existence (and well-being as a high level of existence), man thanks the 'giver of water' in different ways. The obvious truth that the existence of an abundance of water is the basic prerequisite for all abundance was already shrouded by myths and water-guardian deities by the creators of the first civilizations. At the same time, exceptional individuals (scholars, philosophers) begin to think about the world that surrounds them, searching for its meaning, and therefore the place of man in that world. In some of the first known philosophical reflections

(dating back to the 7th century AD), water is considered the basic element, the beginning, of the Universe. We state this for the reason that the latest knowledge about water largely corresponds with this teaching.

The great religions (which their followers believe are the direct word of God, God's revelations), Judaism, Christianity and Islam, give water the importance of life and universal energy which (as life) permeates the entire Universe in a special way (so far unfathomable)¹.

Chemical properties give water a special significance in nature and in human life:

- It is a universal solvent, which means that the largest number of substances dissolve in it; substances that dissolve in water are called hydrophilic ('water-loving'), and those that do not dissolve are hydrophobic ('water-fearing').
- It is a suitable environment for all biochemical reactions (metabolism). Water has the property of being ionized (into H⁺ and OH⁻ ions). In pure water, the number of H⁺ ions is equal to the number of OH⁻ ions. A solution with more H⁺ ions is acidic, while a solution with more OH⁻ ions is basic. An acidic solution has a pH lower than 7, a basic solution above 7, while it is neutral with a pH = 7.
- The transport role of water is reflected in the easy transfer of substances that dissolve in it (amino acids, sugars, proteins) through the cell itself and from one cell to another.
- Water also plays a role in thermoregulation (maintenance of constant body temperature in birds and mammals). Sweating lowers body temperature.

Water is also known for its 'anomalies'. When we say 'anomalies', we emphasize the fact about some specific behaviors of water in relation to all other substances in nature. Thus 'anomalies' become the essence of water. Discoveries confirmed by experiments, concerning the fact that water has memory and that it behaves like a living being, can be considered the biggest, most spectacular and far-reaching in the entire human history^[1]. Encouraged by this discovery of Dr. Benvenista, the Japanese Masaru conducted experiments with water in a way of checking whether water has feelings^[1,2].

Bosnia and Herzegovina abounds with many examples in which water and nature are in such a relationship that it takes one's breath away. On the other hand, examples have been noted where man has 'upgraded' nature and 'entered into a special symbiosis' with water, ranging from pure utilitarianism to pure hedonism.

II. Environment

By 'environment' we mean any possibility in space in which man can realize his existence^[3].

¹ John the Baptist also baptized Jesus in the Jordan River. In Christianity, water is omnipresent; the first entry into a religious community is marked by the act of baptism, which is the first of the seven sacraments and throughout history has been considered an act of purification and regeneration. In most churches, there are special stone vessels with baptismal water or special separate rooms, and sometimes separate buildings intended for rituals in which water, as a purifier, plays the main role. (In Bosnia and Herzegovina there is an extremely valuable example, the Baptistery in front of the early Christian basilica in Drinovci near Grud, from the 3rd century). Baptisteries or baptisteries are intended for this first stage of initiation, in which they represent the immaculate womb of the Blessed Virgin from which the initiate is born anew. The very entry into the church is accompanied by a ritual sprinkling of consecrated water, with which the believer should come closer to God. In Christianity, the miraculous healing powers of water are known (for example, various sick people flocked to the Bethzatha pond in Jerusalem because it was believed that the water there had miraculous healing properties).

It is said in the Qur'an:

- „Don't those who disbelieve see that the heavens and the earth were closed (whole), so We tore them apart. And from water we made every living thing. So will they not believe?“ (Qur'an, Al-Anbiya, 30)
- „And Allah created every animal from water. Well, there are those who walk on their stomachs, and there are those who walk on two legs, and there are those who walk on four. Allah creates what He wills. Truly! Allah has power over everything.“ (Quran, An-Nur, 45)
- „And He is the One who created man from water, and made him kinship and in-laws. And your Lord is Mighty.“ (Qur'an, Al-Furkan, 54)

Qur'an (Al-An'-am: 6, 59). Translation of the Qur'an into Bosnian - Besim Korkut (In Arab and Bosnian).

The word Water (Baher) is mentioned 32 times in the Qur'an, and the word Earth (Barr) 13 times. If we add up the number of mentions of water and earth in the Qur'an, we will get the number 45. The percentage representation of the word Water in the total number of words (Water and Earth) is $32/45 \times 100 \% = 71.111111 \%$. The percentage representation of the word Earth in the total number of words (Water and Earth) is 28.88888888% . The ratio of Earth and Water on Earth amounts to exactly this much.

It is not possible to present water and man in autochthonous symbiosis in Bosnia and Herzegovina without first looking at the environment, both natural and social. Only when the natural and social environment, and water as a medium that binds the entire Universe, are in a relationship with each other, it is possible to understand the emerging forms of symbiosis of water and man in Bosnia and Herzegovina.

1.1. Natural environment

The natural environment is determined by 'givens in themselves', those elements given by nature and on which man has not exerted his influence, and if he has, then to an insignificant extent. From the aspect of scientific 'coverage', the natural environment is under the observation of the natural sciences (physics, chemistry, geography, astronomy, biology, mathematics...).

Geographical location. Bosnia and Herzegovina is situated between 42°26' and 45°15' north latitude and between 15°45' and 19°41' east longitude and belongs to the region of Southeast Europe (Figure 1). Due to its position, it is counted among the countries of the western part of the Balkan Peninsula. Its territory is influenced by two geographical zones of the northern hemisphere, the southern parts of the northern temperate zone and the northern parts of the northern subtropical zone. The entire territory of Bosnia and Herzegovina is under the influence of Atlantic air currents. In addition, during the colder period of the year, the territory of Bosnia and Herzegovina is often flooded by cold continental air masses from the north and east.



Figure 1. Geographical location of Bosnia and Herzegovina

https://visitmycountry.net/bosnia_herzegovina/bh/index.php/turizam/27-vmc/geografija, Accessed: 7.16.2022.

Geomorphology. The geological structure and petrographic composition of the terrain of Bosnia and Herzegovina^[4] is the result of a long geological past, which resulted in the formation of igneous, sedimentary and metamorphic rocks, and many mineral deposits^[5].

The relief developed during the Paleozoic, Mesozoic and Cenozoic periods. Hydrographic runoff is the result of the existence of a developed karst area. Geomorphological and hydrogeological factors have an important influence on hydrological conditions^[4,5]. On these foundations, with suitable marginal contact with hydrogeological insulators, all the sources of significant watercourses are formed. With the same geomorphological and precipitation features, but without karst, the water regime in Bosnia and Herzegovina would be significantly less favorable.

Climate. Climate is one of the essential dimensions of the natural environment. It is a term that implies a set of atmospheric phenomena (states and processes) above a certain part of the Earth's surface^[6].

The climate of Bosnia and Herzegovina is determined by its geographical position, the proximity of the Adriatic Sea, the direction of the mountain ranges, and the constant change of air masses that arrive in this area from the Atlantic Ocean, the Mediterranean Sea and the continental part of Europe. The area of Bosnia and Herzegovina is specific for dynamic changes in the climate picture in a relatively small area (Figure 2). In a stretch of about 200 km, from the Adriatic Sea to the interior, three climates change. Considering the geographical latitude, Bosnia and Herzegovina is located in the northern temperate heat zone, which means that this position determines the overall climate without the dominance of only one type. According to the characteristic features of the climate, it is possible to distinguish three separate climatic zones in Bosnia and Herzegovina:

1. Maritime belt (Mediterranean climate is represented in low and high Herzegovina. We distinguish two types of Mediterranean climate: the area of low Herzegovina, which corresponds to the lower course of the Neretva with the surrounding karst fields lower than 1,000 m above sea level: these are Ljubuško, Imotsko-bekija, Mostar and Stolac.
2. The changed Mediterranean climate affects the area of upper Herzegovina. In this higher Herzegovina and southwestern mountainous area, the climate is close to mountain, but with Mediterranean characteristics.

Air temperature decreases with increasing altitude and distance from the sea. For every 10 km distance from the sea, the temperature drops from 0.6 °C to 0.8 °C. Winters are harsh with absolute minimum temperatures of -14 °C to -25 °C. Average January temperatures range from -1.8 °C to -6 °C.

3. Alpine belt, in the area of central Bosnia with continental mountain climate. The basic characteristic of this climate is a harsh winter, with temperatures down to -30 °C. The average amount of precipitation ranges from 1000 to 1200 l/m². The highest amounts of precipitation occur in late autumn (94 l/m²), and the least in February (about 67 l/m²). Snowfall is abundant, especially at higher altitudes.
4. The mountain climate occupies the central mountain area of Bosnia and Herzegovina. This type of climate is most pronounced around the mountains of Oštrelje, Travnik, Sarajevo and Foča. It is characterized by fresh and short summers, cold and snowy winters. Average January temperatures range from -3.5 °C to -6.8 °C, and July temperatures range from 14.8 °C to 16.9 °C.

Precipitation that falls on the territory of Bosnia and Herzegovina first flows through small streams and rivers towards larger rivers, and these towards the sea or a larger (most often international) river, until it too ends up in the sea. The relief in Bosnia and Herzegovina is shaped by two basic basins, the Black Sea (Danube) and the Adriatic basin. At the same time, each of these basins has its own sub-basins defined by the main rivers of the sub-basin (Figure 2). Water knows no borders of administrative division in the world (countries, regions, continents...). For this reason, water is seen as a global good of planet Earth. At Earth level, there are some adopted international conventions on water management as a common good of humanity.

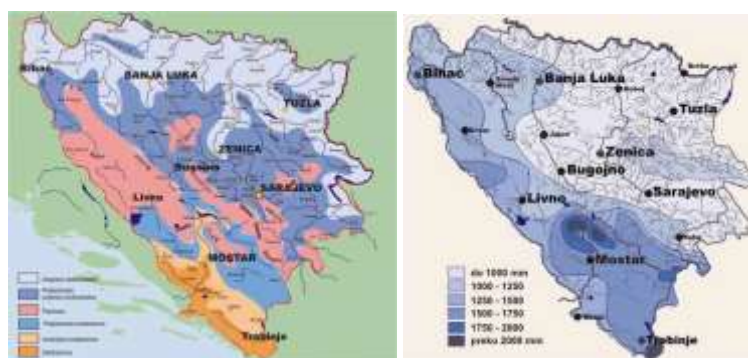


Figure 2. Climate (left) and precipitation (right) in Bosnia and Herzegovina
<http://bih-x.info/bh-info/klima/>, Accessed: 7.16.2022.

1.2. Social environment

The social environment is determined by the elements of human activity, which could be called society by one name. So, we are talking about man-made nature, which as such is changeable, into which man enters with his birth, which he obeys, but which he also changes in accordance with his system of needs.

The social environment is the subject of research in the humanities (history, sociology, philosophy, psychology, anthropology, economics, linguistics, demography...), and special forms of human consciousness such as morality and religion. All branches of art are a reflection of social relations as the artist sees them.

History of Bosnia and Herzegovina. In order to understand the central theme of this book (Water and man in autochthonous symbiosis in Bosnia and Herzegovina), the selection of examples of symbiosis as well as their territorial disposition within Bosnia and Herzegovina, the relationship of religions and certain ethnicities to water, it is very important to give a cross-section through the history of Bosnia and Herzegovina. Herzegovina. In addition, the history of Bosnia and Herzegovina can be traced through the following periods: Prehistoric Era (Paleolithic 12000-7500, Neolithic 7500-4000 AD, Bronze Age 3300-700 AD, Iron Age 700-400 AD), Ancient Period, Illyrian Hellenism (300- 27 BC), Celts (4th century BC), Romans (3rd century BC-3rd century), Western Roman Empire (395-475), Goths (493-535), Origin of the Bosnian state (7-10 cent.), Eastern Roman Empire (476-), Foreign invaders, Serbs (931-960), Croats (968), Byzantium (1019), Hungarians (1102-1135), Bosnia as Banovina (1154-1163), Bosnia as Kingdom (1353-1463), Ottoman Period (1463-1878), Period of Austro-Hungarian Monarchy (1878-1918), Kingdom of SHS (1918-1929), Kingdom of Yugoslavia (1929-1941), NDH Era (1941-1945), FNRJ, SFRY ("Tito's Yugoslavia", 1943-1991), Bosnia and Herzegovina (1992-1995-) [7,8].

The transition from one historical period to another was, as a rule, dramatic, where the "new winners and masters" tried to disparage the previous masters and erase as much as possible the traces of their culture and existence. Perhaps this kind of history, more than anything else, explains why the inhabitants of Bosnia and

Herzegovina chose water to express their desire for eternal life, for immortality. Finally, such a turbulent history has made Bosnia and Herzegovina a specific, unique country that only a few are able to understand. It will remain mysterious and attractive to seekers of the truth and meaning of life.

Socio-economic relations. Socio-economic relations represent society's relation to the means of production. At the same time, society is a complex system made up of people and their communities, which is determined by the relationship of individuals to communities, the relationship of communities to man-individuals...

The means of production are a whole system of technical-technological solutions (material and immaterial) that appear as a link between man (society) and the given world (nature) with which man (society) works in order to achieve his existence. On the territory of Bosnia and Herzegovina, man has gone through all stages of social development, from life in a cave to forms of democracy and political pluralism. For Bosnia and Herzegovina, the transition from capitalism to socialism (after the 2nd World War, the era of 'Tito's Yugoslavia') and the transition from socialism to capitalism (a long period, from the multi-party elections before the war in 1992-1995, the war period and the post-war period) was particularly dramatic. , up to today). While the first transition was carried out by the euphoric takeover of power from the working class (the Communist Party-Union of Communists was only its 'most mature part'), the second transition was recognized as restitution, the return of goods from the hands of fluidly defined social property to the hands of concrete people-individuals. or their associations.

With regard to the ethnic and religious diversity in Bosnia and Herzegovina, some historical turning points were perceived by certain ethnicities as 'the onset of good times for them', while the same changes were perceived by other ethnicities as 'the end of good times' and the onset (according to them) of bad weather. periods.

Forms of consciousness (religion, philosophy, morality, science, art). Forms of consciousness in a social community represent more or less ordered systems (written and unwritten, practical or completely spiritual) that reflect the relationship of man-individual to narrower and wider social communities, the relationship of an individual to the given world (nature), the relationship of man-individual to man -to an individual, the relationship of a social community to another social community, the relationship of a social community to a human-individual...

Religion is an organized system of human belief about the origin of the world and itself, as well as belief in the human mission. Representation of all major religions in Bosnia and Herzegovina (objectively) should mean a great wealth of civilization. However, the history of Bosnia and Herzegovina is largely written by the (albeit unnatural) enormous intolerance of the three major religions.

Philosophy represents a system of schemas through which an individual, larger or smaller social groups look at the world around them [9].

Morality is a set of unwritten rules and customs that determine the complex relationship of man to man, man to society, society to man-individual, man to nature. The central categories of morality are good (and evil), right (wrong) and just (unjust), truth (false).

Science is an organized system of research and interpretation of objective reality (nature) and application of knowledge where experiment and mathematical proof is the only objective way to the truth. The status of science in society, the range of scientific disciplines, as well as the achievements of each of them individually, have always depended on the general social wealth (on the one hand) and the understanding of science (by the ruling elite) as a driver of the overall progress of society. We have science in poor societies, there is no science in conflict societies, there is no science in corrupt societies.

III. Man

Man, since he lives on Earth, affects certain natural processes, including the state of water in nature (on Earth), and this influence is, as a rule, 'negative'. Namely, man is able to influence some natural processes by directing their flow 'to his advantage'. The greater and more obvious this temporary 'benefit' is (and it is reflected in the noticeable deviation of some phenomenon-process from its 'natural form'), the more intense will be the unpredictable reaction of nature (through phenomena that man names as "natural disasters and catastrophes"), more disastrous for man and the living world on Earth. Man has long viewed water as a resource, which means that water is also a commodity that has its own price, and that, as such, it can be monetized. Similar to the air (atmosphere), water "knows" neither geographical nor administrative boundaries on Earth. Since it is the basic premise of the life of every living organism, water monitoring and water management should be coordinated, connected and synchronized, from a private house to the planet Earth as a whole.

Physiological aspect of water. Water is the most important nutrient for life, man and every living being. The human body can live for weeks without other nutrients, but only a few days without water. Water is the most important ingredient of living organisms, the cells of its tissues and the intercellular space, which is filled with a

special liquid. Slightly more than half of the body's mass is made up of water. Thus, in an adult man, water makes up about 60-70%. Individual tissues and organs contain different amounts of water: fat tissue contains 6-20% water, bones contain about 25% water, blood contains about 80% water, urine contains about 87% water, cerebrospinal fluid contains about 99% water, while nervous tissue contains of 70-85% water. Water is found in the body in two forms: free water and bound water.

The psychological aspect of water. Is it because of the 'memory' that he was created from water, is it because of the fact that the majority of his body mass is water, is it because of the fact that he cannot survive without water for more than three days, only man enjoys the feeling that water is at his fingertips . At the same time, unlike any other substance or phenomenon, man feels and experiences water with all his senses: sight, hearing, touch, senses of heat and cold, smell and taste. On the basis of such a complex ('total') experience of water, man, in fact, identified himself with water.

Man built his first dwellings near the water (he built the greenhouses over the water). The first great civilizations are the 'gifts of rivers' and pleasant seas: Egypt - the Nile River, Mesopotamia - the Tigris and Euphrates Rivers, the Chinese civilization - the Yangtze River, Crete and Mycenae - the Aegean Sea, early North American cultures - the Mississippi River...

The health-hygiene-aesthetic aspect of water. Almost every time he starts some important work, man makes contact with water, in a way that he considers appropriate to the importance of the work he will do (in a way that has become traditional for certain human communities or cultures) [10,11]. Every time he felt that he had 'exited' from an optimal state of health, man (already in his closest living environment, in the family) reached for water as a means that would 'bring him back to balance'.

1.3. Water and man in open nature

The relationship between water and man is most immediate in open nature. Here, man adapts to the water, uses all its (found) benefits, but is also afraid of its immense power. Here, man had to study the water well in order to live with it in a symbiotic relationship. There are many modalities in which a person encounters water in open nature: sometimes a person encounters water as rain, which he rejoices in or is afraid of (Figure 3), sometimes a person encounters water as snow (which he looks forward to as a hint of a rich year, or, on the other hand, he fears him as a misfortune that isolates him from other people and life), (Figure 4).



Figure 3. Prayer in nature - 'Rain prayer' on the Kurban stone (for the villages of Glavisno, Hadre and Kovacici) near Olovo (44°10'35.07"N, 18°31'34.61"E)
Source: Author (6.2.2013.)



Figure 4. Motives of the snowy winter in Bosnia and Herzegovina (43°43'58.65"N, 18°17'19.91"E)
Source: Author (2.11.2012.)

Man in Bosnia and Herzegovina encounters water in nature in the form of a small or large stream, a small or large river, a small or large lake, or the sea. Sometimes an encounter with water is perceived as an encounter with life itself, sometimes as a physical obstacle on a person's life paths, sometimes as a special challenge to test a person's psychophysical capabilities...

Man's encounters with water are sometimes intentional (man goes to 'visit water', to enjoy the beauty of its appearance), (Figures 5-11).



*Figure 5. The source of the Klokot river near Bihac (44°49'28.21"N, 15°48'07.74"E)
Source: Author (8.27. 2011.)*



*Figure 6. Pliva river near Jajce (44°20'51.19"N, 17°14'25.86"E)
Source: Author (8.12.2011.)*



*Figure 7. The source of the Ladjanica river in Glavaticevo near Konjic (43°29'26.37"N, 18°07'50.30"E)
Source: Author (7.23.2011.)*



*Figure 8. Kravice waterfall on the Trebizat river near Ljubuski (43°09'21.75"N, 17°36'30.72"E)
Source: Author (7.23.2011.)*



*Figure 9. The source of the Bunica river near Mostar (43°13'17.17"N, 17°53'24.93"E)
Source: Author (8.14.2011.)*



*Figure 10. Bliha river waterfall near Sanski Most (44°47'20.33"N, 16°31'29.41"E)
Source: Author (7.19.2011.)*

Other times, man makes an extraordinary intellectual and psychophysical effort to 'overcome the water obstacle' (with additional means, ships and bridges, for example), while creating such realizations of spirit and skill (architecture) that ensure such a special place in nature (Figure 11).



*Figure 11. Rakitnica river canyon (43°38'18.13"N, 18°12'57.73"E)
Source: Author (8/13/2016., left) and Hajrija Selimovic (9/14/2021, right)*

Many preserved medieval towns-forts (habitations of feudal lords) in Bosnia and Herzegovina bear witness, among other things, to the relationship between man and water in that era. Cities were, as a rule, built along river courses, on inaccessible hills (mostly rocks) in such a way that it was very difficult to access them. And when you find yourself on the outside of its thick and high stone walls, you can feel their physical strength as a barrier between the inner life of the city and any malicious entry into that inner world. On the other hand, from the interior of the fortified city, there is an unobstructed view of all sides around, in fact, of the estates of the owners of the city-fortress. Since this kind of fortress-city occupies a place at the highest elevations of the terrain, there are no natural water sources here; water is collected and stored in specially built basins-cisterns and cisterns (Figure 12).



*Figure 12. Old town Visoki (43°58'35.97"N, 18°10'34.84"E)
Source: Author (10.11.2014)*

And while the fortress-city is an extremely artificial environment where the medieval lords live, all the open space (in which the subjects lived) is natural. Here, people are in contact with natural sources of water, with permanent and occasional (lake) reservoirs, with rivers, streams, ponds... Some open areas take on different purposes during the year: sometimes they are meadows where cattle graze, sometimes they are water reservoirs, sometimes they are places for people to gather for recreation, trade, entertainment... (Figures 13, 14).



*Figure 13. Occasional lake above the village of Sinanovici, Bjelasnica (43°36'18.15"N, 18°15'30.98"E)
Source: Author (01.01.2012. and 4.28.2013.)*



*Figure 14. Folk fun (teferic) in the Umoljani village on the Bjelasnica Plateau (43°40'14.33"N, 18°13'26.39"E)
Source: Author (9.2.2011.)*

Since the time of man's presence in Bosnia and Herzegovina, hot water sources have been considered places of special importance, places of positive energy, places where people restored damaged health, places where healthy people refreshed themselves and strengthened themselves for all life's obligations and challenges. Today we recognize these places as spas (Figure 15)².



*Figure 15. Hot water springs, Ilidza, Banjaluka (44°44'55.68"N, 17°09'30.59"E)
Source: Author (8.1.2011.)*

Bridges are creations of human knowledge and skill, artificially ensuring the continuity of man-made paths over natural obstacles (most often water courses). In Bosnia and Herzegovina, there are still them from the time of the Romans (Figure 16), a large number from the time of the Ottoman Empire^[12] (Figure 17), and more recent history.

² Spa Ilidza near Sarajevo. This spa was famous in Roman times (the present-day town of Ilidza was called Aqua S. The remains of the Roman baths have been preserved here to this day). During the Ottoman era (Ilidža got its name from the Turkish word 'iladz', which means 'health'), Ilidža was an important place for water treatment and recreation. According to its physical and chemical properties, the water used for therapy in Banja Ilidža is mineral (3,694 mg/l), sulfurous and hyperthermic (57.5 °C). It is rich in minerals (Ca, Na, Mg, sulfate, chlorine) from several sources, and the amount of CO₂ in its content is 491.3 mg/l. The radioactivity of water is 10 MJ.



*Figure 16. Roman bridge on the Orlja river near Olovo (44°07'26.15"N, 18°30'35.35"E)
Source: Author (7.28.2011.)*



*Figure 17. Mehmed Pasha Sokolovic Bridge in Visegrad (Architect: Mimar Sinan, 1577), (43°46'57.67"N, 19°17'12.23"E)
Source: Author (8.4.2011.)*

1.4. Water, man and village

A village is a more or less complex physical structure designed and arranged by man in order to ensure a pleasant life in community with other people. Villages are formed in environments that offer enough resources for human life in the most direct human-nature relationship. At the same time, the existence of water is the basic (and often eliminative) condition for choosing a wider village location (Figures 18-21).



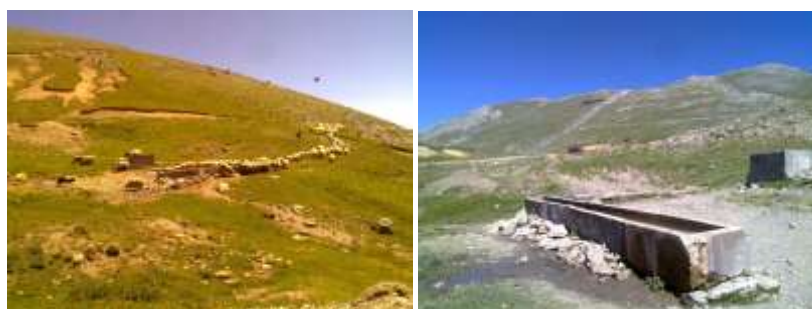
*Figure 18. Public fountain along the road Hrenovica-Bijele vode-Goražda (near 'White waters'/'Bijele vode'), (43°42'55.34"N, 18°55'45.32"E)
Source: Author (8.11.2011.)*



*Figure 19. Public fountain for cattle (Sudici village, Ilijas municipality), (44°03'12.00"N, 18°32'19.55"E)
Source: Author (5.15.2011.)*



*Figure 20. Hair fountain in Lukomir, municipality of Konjic (43°38'32.17"N, 18°10'59.33"E)
Source: Author (7.1.2012. and 11.20.2011)*



*Figure 21. Public fountain (slopes of Bjelasnica, above the village of Lukavac), (43°41'23.12"N, 18°16'06.08"E)
Source: Author (6.17.2012.)*

In the conditions of Bosnia and Herzegovina, the creation and development of a village can be connected with the establishment of one family-nucleus, from which new families arise. In the later growth and development of the village, it may happen that a family from another village comes to the village in question, on various basis of life, of which the inheritance of property is one of the possible ones. The water source used by the village (open spring, arranged spring with fountain, arranged spring with fountain and watering place for livestock) is one of the most significant physical-spatial and mental-psychological points of a village, as a physical structure and as a social community. It is a place where people meet throughout the day, with the morning and evening meetings being the most significant, since 'daily briefings' are held then on all aspects of the intimate human (individual) life of people and their community. The arrangement, generosity and maintenance of the public fountain are the image of every village. Sometimes the inhabitants of a village pay particular attention to the comfort of travelers who will pass through their village, and arrange a public fountain in such a way that it is at the service of every passer-by (Figures 22-26).



*Figure 22. 'Carevac' fountain (Crni Lug near Bosansko Grahovo), (44°04'29.71"N, 16°34'17.54"E)
Source: Author (8.12.2011.)*



*Figure 23. Hair (memorial) fountain along the Vlasenica-Bratunac road (in Hrcnici), (44°14'34.17"N, 19°07'00.76"E)
Source: Author (05.08.2011.)*



*Figure 24. Public fountain ('Šeh-Avdija's fountain'), Bukov Do village on the Krivaja river (44°11'01.19"N, 18°33'17.96"E)
Source: Author (16.04.2011.)*



*Figure 25. Hair-fountain (Strgacina near Rudo), (43°40'03.05"N, 19°13'38.00"E)
Source: Author (07.05.2011)*



*Figure 26. Public fountain (on the 'Jelenjača' pasture above the Sinanovici village, Bjelasnica Plateau), (43°36'17.02"N, 18°15'36.05"E)
Source: Author (17.06.2012.)*

It is interesting that many villages in Bosnia and Herzegovina both arose and have already disappeared as organized physical structures, but some traces remain that unmistakably point to their former existence. In

addition to generous sources of water, there are also necropolises, traces of ore exploitation, remains of infrastructure (roads, bridges)... (Figures 27, 28).



*Figure 27. Hot water spring 'Iliđža' in Knezina (44°01'10.51"N, 18°45'34.16"E)
Source: Author (8.2.2011.)*



*Figure 28. Hot water spring 'Toplik' in Knezina. (This spring supplied the hammam with hot water. Even today, in the everyday conversation of the locals, it is said: 'under the hammam'), (44°01'02.25"N, 18°45'39.90"E)
Source: Author (8.2.2011.)*

A special case of the human-water relationship in Bosnia and Herzegovina is the house complexes (of rich families) built along the river, in an extremely rich natural environment³ (Figures 29, 30).



*Figure 29. The source of the Buna river (Blagaj near Mostar), (43°15'24.18"N, 17°54'11.94"E)
Source: Author (11.2.2008.)*

³ Such are, for example, the house complex Velagićevina on the river Buna (in Blagaj near Mostar), the complex Begovina on the river Bregava (near Stolac).



Figure 30. 'Velagicevina' residential complex at the source of the Buna river (Blagaj near Mostar)
(43°15'25.88"N, 17°53'53.43"E)
Source: Author (Drawing, 1985)

1.5. Water, man and city

A city is a more or less complex physical structure in which a large number of people live in a more or less complex complex of mutual relationships. In contrast to villages (where agriculture is the primary occupation of people), city dwellers are engaged in non-agricultural activities. As a rule, the city is not created on the principles (logic) of the creation of the village (principles of sustainability, survival in direct contact with nature), but on the principles that generate its wealth and the safety of people. Similar to other parts of Europe and the world, in Bosnia and Herzegovina the first settlements to which the epithet 'city' is attributed were created in the Middle Ages (13th-14th centuries), although they were more or less complex habitats of feudal lords (lords of the fief or 'state'). The location of these 'cities' was chosen based on the principle of ensuring security (possibility of defending against attackers) and visual visibility of the physical space that the lords in question own^[12,13] (Figures 31-34).



Figure 31. Bosanska Krupa on the river Una (44°53'05.89"N, 16°09'18.71"E)
Source: Author (7.19.2011.)



Figure 32. The medieval fortress-city of Buzim (45°02'53.63"N, 16°01'52.24"E)
Source: Author (7.19.2011.)



*Figure 33. The medieval Tusanj town (44°36'48.62"N, 17°59'19.68"E)
Source: Author (25.07.2011.)*

Since the locations suitable for such constructions were the tops of inaccessible hills (sometimes rocks), there were usually no water sources on them; water for all life needs (as rainwater) was collected in special brick spaces (cisterns, cisterns). The emergence of cities and urbanization in the context of the modern understanding of these concepts, arise with the entry of the territory of Bosnia and Herzegovina into the framework of the Ottoman Empire (1463). New, complex cities are created at the intersections of important roads, along rivers and lakes, often at the foot of hills with medieval fortifications-habitats of feudal lords (Figure 34).



*Figure 34. View from the Maglaj Old Town to the new town (left). Water cistern (right), (44°32'37.00"N, 18°06'07.34"E)
Source: Author (7.25.2011.)*

In such cities, water becomes the main backbone on which the physical structures of the city, complexes and individual objects rely. In this case, water (river, lake) followed the routes of important roads (since river valleys were the easiest to build). In addition, the benefit of the presence of water was observed (in terms of a favorable microclimate, solutions for maintaining urban cleanliness, using its power for utilitarian purposes, such as grain mills...).

However, the river flow sometimes represented a physical obstacle for the development of the urban fabric, or floods threatened the city itself. These 'adversities', however, initiated works on the regulation of river flows and the construction of bridges (which, in themselves, over time became far more than initial utilitarianism, reaching the meaning of symbols in human lives and the meaning of the degree of the general level of civilization of a society or nation)^[14] (Figures 35-37).



*Figure 35. The source of the river Bistrica ('Duman') in Livno (43°49'55.61"N, 17°00'29.62"E)
Source: Author (7.17.2011.)*



*Figure 36. Old bridge in Mostar (43°20'14.16"N, 17°48'54.04"E)
Source: (5.1.2013.)*



*Figure 37. Mehmed Pasha Sokolovic Bridge in Visegrad (43°46'58.89"N, 19°17'13.50"E)
Source: Author (8.4.2011.)*

Streets and squares are elements of a modern city that are much more than spaces for communication between people and goods. These are the elements of the physical structure of the city that generate all other functions of the city expressed through individual physical structures (crafts-workshops, restaurants-bars, religious buildings, schools, administration...), (Figures 38-40).



*Figure 38. Hafizadic fountain (the fountain in front of Omerbeg's house (1845-1846), Jajce (44°20'19.32"N, 17°16'13.53"E)
Source: Author (7.19.2011.)*



*Figure 39. Public fountain (next to the mosque in Kalesija), (44°26'38.52"N, 18°52'28.21"E)
Source: Author (7.27.2011.)*



*Figure 40. Public fountain in front of the harem of Hadzi Balibeg's (Kursumli) mosque in Kladnje (1545),
(44°13'32.76"N, 18°41'25.78"E)
Source: Author (8.3.2011.)*

The presence of water in these elements of the cities of Bosnia and Herzegovina is significant, with the meaning of pure utilitarianism to the expression of the complex being of people and society (philosophy, religion, morality, psychology, aesthetic principles...). In the past, for purely hygienic and aesthetic-psychological reasons, a branch of the watercourse was led through the city fabric. Other times, street public fountains were built, and in the squares (mejdans) especially lavishly decorated public fountains, sebilja.

The special wealth of Bosnia and Herzegovina is its cities that possess preserved parts or wholes of their physical structures from different times, on a scale from their founding (the Middle Ages), through the era of the Ottoman Empire, Austria-Hungary, the Kingdom of SHS (Kingdom of Yugoslavia), SFRY (FNRJ), to today's sovereign Bosnia and Herzegovina (Figures 41-45).



*Figure 41. Public (memorial) fountain, Kresevo (43°51'56.35"N, 18°02'41.56"E)
Source: Author (12.4.2011.)*



*Figure 42. A fountain in the village of Begluk, Livno (43°49'42.94"N, 17°00'35.62"E)
Source: Author (7.17.2011.)*



*Figure 43. Public fountain next to the Zabljak mosque (middle of the 17th century), (Stari Grad, Ljubuski). The fountain was built in 1935 (43°12'07.41"N, 17°32'55.35"E)
Source: Author (7.23.2011.)*



*Figure 44. The fountain on 'Trg Slobode' in Tuzla (44°32'21.20"N, 18°40'31.03"E)
Source: Author (5.18.2013.)*



*Figure 45. The fountain in the harem of the mosque in Nova Kasaba (44°12'56.12"N, 19°06'23.34"E)
Source: Author (8.5.2011.)*

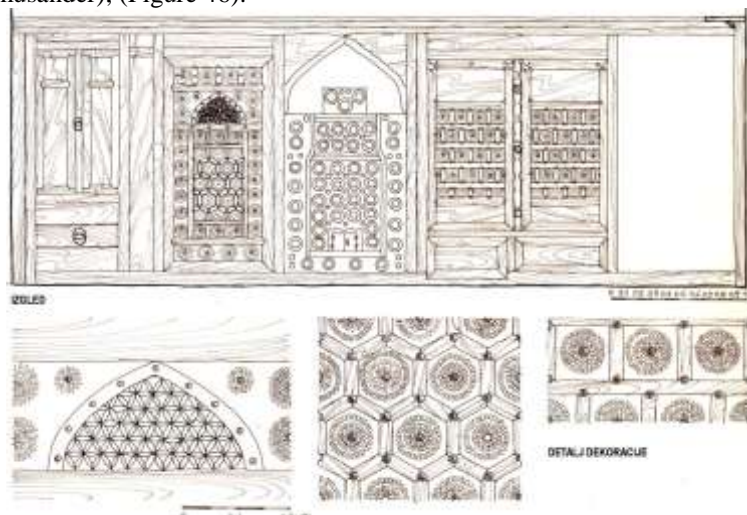
With such a complex fabric (and the external image perceived by its visitor), the city of Bosnia and Herzegovina seems like a living organism with which a connoisseur knows how to communicate.

1.6. Water, man and his house

A man is most readable in the context of his house. Here (through the location of his house within the urban and natural environment, the disposition of its horizontal and vertical plan, its materialization, and especially through the treatment of water) man reveals himself: he expresses his relationship to nature, his relationship to his neighbor, shows intra-family relationships...

In medieval fortress-cities (habitats of feudal lords with more or less numerous military crews), water was collected and stored in a brick room (cistern or cistern) located in one of the inner courtyards. With the fall of

Bosnia and Herzegovina under the administration of the Ottomans, these areas are included in a new sphere of civilization that inherits all the best that great civilizations (Mesopotamia, Ancient Egypt, Persia, Ancient Greece) gave. All the mentioned civilizations cultivated a cult towards water, and the Ottomans, under the auspices of Islam (as a religion and an overall view of the world), will bring it to the area of today's Bosnia and Herzegovina. Water is ubiquitous in human life, from birth to death, every day and in every place. Being clean (which means bathing often) is one of the most important qualities of people who follow Islam. Even the houses of the poorest members of Islam in Bosnia and Herzegovina had a place for bathing (spa). In the houses of wealthier Muslims, the place for bathing (hamamdžik) was arranged as one of the three basic compartments of built-in wardrobes (musander), (Figure 46).



*Figure 46. Musander in Semiz's house, Sarajevo
Source: Author (Drawing, 1984)*

For washing hands before and after eating, a special portable container, an ice bowl, was used. Inner courtyards (courtyards) were those places within a private house complex that, with their decoration, said a lot about the man and his family. Fenced off from the road and neighboring house complexes (by a more or less massive wall made of wood, adobe or stone), the courtyard was a kind of specially protected and arranged home garden. Due to its utilitarian nature, the courtyard was a surface for communication between the scattered contents of the house complex (main residential building, summer kitchen, garden, orchard, woodshed, stable for horses...). For this reason, the treatment of the walking surface is made of durable covering (stone pebbles or stone slabs). There were a lot of unpaved places (čičeklukli) where flowers and ornamental bushes were planted. The fountain and the well had a special place. Some richer houses had fountains in their courtyards (Figure 47).



*Figure 47. Sabanovic House in Sarajevo (courtyard with fountain), (43°51'43.75"N, 18°25'58.79"E)
Source: Author (Drawing, 1983)*

IV. Fountain

A fountain is a construction or design that regulates the consumption of water in a purposeful and beautiful way. As an element of urban furniture, village furniture and individual house complexes, the fountain is part of many cultural traditions. The fountain entered the life of people in Bosnia and Herzegovina with the arrival of the Ottoman Empire (1463).

1.7. The fountain as a utilitarian object

Basically, a fountain is a purely utilitarian object where a person can satisfy one of his elementary needs, the need to consume water. We have seen to what extent water is the presupposition of life; hence construction, a 'place for consuming water' (fountains, fountains, wells), seems extremely natural, even to such an extent that it seems to us that a fountain is 'naturally there', like a tree trunk, a stream or a stone, for example. It is paradoxical that the 'natural existence of a fountain' in an open space, in cities and villages around the planet Earth, is exactly rare.

Fountains all over Bosnia and Herzegovina, by the location where they were built and by the simplicity of their design, are strikingly purposeful (Figures 48-52).



Figure 48. Hair fountain (along the Medjedja-Ustipraca road), (43°40'48.15"N, 19°08'22.14"E)
Source: Author (5.7.2011)



Figure 49. Public fountain along the Gorazde-Ustikolina-Foca road (43°32'54.20"N, 18°47'34.61"E)
Source: Author (8.4.2011.)



Figure 50. Public fountain 'Kuluša 2', Petrovici near Olovo (44°08'40.04"N, 18°42'50.19"E)
Source: Author (9.18.2011.)

With some fountains, their purpose to serve both people and animals is striking ().



*Figure 51. Memorial fountain (martyr's fountain), along the Gajevi-Sudici-Dragoradi road (Ilijas municipality, near Sarajevo), (44°03'33.05"N, 18°32'13.02"E)
Source: Author (5.15.2011.)*



*Figure 52. Public fountain 'Podjezero' (Bukov Do village on the Krivaja river), (44°10'51.10"N, 18°33'20.08"E)
Source: Author (4.16.2011.)*

1.8. The fountain as an expression of man's need for the beautiful

No matter what a person does, if he does it with full awareness of the expediency of the work, he works with pleasure and with the need to work in a beautiful way. No matter how useful a fountain is (and as such an expression of one of the most basic human needs, the need for water), man approaches its construction as a sublime act. Česma is that place in free space and in a man-made environment that brings people together, regardless of their origin and social status. Therefore, the design of the fountain is, in fact, an expression of the effort of its builder to present himself to people, what kind of image he wants to leave in the memory of people, both contemporaries and generations yet to come. The appearance of the fountain reflects the character of its builders. Sometimes the performance of the fountain is burdened with more than obvious messages from its builders (that is, founders, waqifs, donors), sometimes to such an extent that through the design and materialization of the fountain, we can discern the place where it was built, the profiles of the personalities who built it, and the motives of the people who built it. (Figures 53, 54).



*Figure 53. Memorial (martyr's) fountain, Cava near Bosanska Otoka (45°01'25.98"N, 16°05'38.01"E)
Source: Author (8.27. 2011.)*



*Figure 54. Hair fountain, Vranici near Gorazde (43°37'38.01"N, 18°54'27.89"E)
Source: Author (4.2.2011.)*

1.9. The fountain as a transmitter of a message

Sometimes the construction of a fountain (selection of its location, design and materialization) is a function of a more or less direct effort to convey a certain message of its founder. This message, at first glance, can be read as: goodness and nobility, wealth, wisdom, godliness, modesty (Figures 55-60).



*Figure 55. Hair-fountain next to the turbe and tekkia in Oglavko near Fojnica (43°59'14.54"N, 18°00'01.02"E)
Source: Author (3.24.2013.)*



*Figure 56. Public fountain next to the Hadzi-Kurtova mosque-Tabacica (16th-17th century) in Mostar (43°20'14.56"N, 17°48'50.41"E)
Source: Author (8.14.2011.)*



*Figure 57. Public fountain, Kamicani near Kozarac (44°57'51.83"N, 16°50'47.79"E)
Source: Author (8.1.2011.)*

What an attentive traveler (well versed in the history and culture of Bosnia and Herzegovina) will notice when he encounters a fountain in Bosnia and Herzegovina are the inscriptions on the fountains whose lapidary

language and the meaning of the message are close to the language and philosophy of the inscriptions (epitaphs) on Bosnian stećci (Figures 58-60).



*Figure 58. Hair-fountain and fountain in the harem of Hadzi Zulfikar mosque (17th century), Banjaluka, Lijeva Novoselija settlement (44°44'11.05"N, 17°09'18.78"E)
Source: Author (8.1.2011.)*



*Figure 59. A fountain with a fountain in the harem of the mosque in Bosanska Dubica (45°10'49.26"N, 16°48'15.29"E)
Author (8.18.2011.)*



*Figure 60. Hair-fountain, Cava near Bosanska Otoka (45°02'43.27"N, 16°05'20.67"E)
Source: Author (8.27.2011.)*

Sometimes fountains are designed and materialized with an obvious effort to show the wealth of the builder (founder), and sometimes they are modest to the extent that one can discern in them only someone's noble intention to do good, as for example the gift of a sip of invigorating water (Figures 61, 62).



*Figure 61. Public fountain, Budozelje village near Vares (44°05'04.49"N, 18°20'06.28"E)
Source: Author (5.2.2011.)*



Figure 62. Public fountain with watering hole for cattle (Pogar village near Vares), ($44^{\circ}11'26.82''N$, $18^{\circ}19'01.20''E$)

Source: Author (6.11.2011.)

Some fountains transmit a rich tradition (story), from generation to generation. The stories, for the most part, have a religious basis, and they talk about scenes from life that sound like folk legends to us today.

1.10. The fountain as a symbol

Considering the motivation with which someone approaches the construction of a fountain, several types of fountains can be observed in Bosnia and Herzegovina:

- Public fountain (built by the community: village, city, state...,
- A public fountain (raised by one or more people) with a message (expressed by the inscription on the fountain) that it is at the service of all people,
- Hair – a fountain (good deed), where its founder emphasizes that he raises a good deed (hair). Sometimes a hair-fountain is raised 'for the soul' (for a memorial) to a dear person (father, mother, parents, for a child who died early, for a dear person in general),
- Memorial fountain (with an inscription, the founder announces that the fountain was erected as a memorial fountain 'for the soul' of a certain person),
- The Martyr's fountain is a memorial fountain that is erected in honor of the martyrs (fighters - the righteous who gave their lives on the 'path of truth and goodness').

1.11. The fountain in context

The fountain, as an expression of the basic human need for water, is a sublimated expression of the time and space in which it was created. By analyzing the fountain, we have the opportunity to read a time, in a similar way as we do with architecture. Although fountains in Bosnia and Herzegovina have been built since the arrival of the Ottoman Empire in these areas, there were periods when already built fountains were demolished, precisely because of their mental strength and symbolism.

Every fountain has its own history. Some fountains were created quite by accident, while others were very seriously planned and built with a lot of human effort, will and material resources.

Some fountains are used very frequently, and others rarely. Some fountains have become famous, while others are completely anonymous.

V. Conclusion

Water, universal matter and energy, which in an as yet unexamined way binds the individual givens of the Earth and the Universe into a unique whole, and man, as one of the givens of Nature (according to everything known so far the most developed stage of life on Earth) are parts of the Universe, essentially bound into a whole which we call Life.

Knowledge of the complex dimensions of Life (to which man is guided by his position on Earth and the Universe) will result in an endlessly wide array of manifestations of the symbiosis of water and man, which will testify to the complexity of man.

However one man, as an individual, can be learned or ignorant, good or evil, generous and selfish... (in the multitude of criteria that we evaluate according to the scale defined by man), we can also evaluate narrower or wider social communities, even human population on Earth, as a whole. In other words, the human population as a whole can bring the conditions for its own life and survival on planet Earth to the level of self-destruction, but it can also preserve and more or less improve them.

Today, we are aware that man can decide his future on planet Earth (not counting all the known and unknown threats to his life that come from the nature of the Earth and the Universe). All serious societies (states) on Earth (even the United Nations as a community of states) are making water management programs in the future. Basically, each program is directed in two directions:

1. Rational use of water,

2. Conservation of water (as a resource) from pollution^[15,16,17,18,19].

Every human individual should be aware of the importance of water for life on planet Earth, and aware of the fact that the amount of water is a finite, constant quantity (and that, for example, the human population is increasing). Every individual, in every place, in every situation must think and work on water conservation.

References

- [1] Masaru, E. (2004), *The Hidden Messages in Water*, Beyond Words Publishing, Hillsboro, Oregon, p. 19
- [2] Batmanghelidj, Dr. F. (1992), *Your Body's Many Cries for Water*, TIGMAN, London, Sydney, Los Angeles, pp. 55-69
- [3] Hadrovic, A. (2007), *Defining Architectural Space on the Model of the Oriental Style City House in Bosnia and Herzegovina, Serbia, Montenegro, Kosovo and Macedonia*, Booksurge, LLC, North Charleston, SC, USA, pp. 14-26
- [4] Rodic, D. P. (1981), *Geography of Yugoslavia I*, Scientific book, Belgrade, p. 148, (In Serbian)
- [5] Miosic, N. (1977), *Interpreter. Maps of mineral, thermal and thermomineral waters of Bosnia and Herzegovina, "Geoinženjering"* - Sarajevo, OOUR Institute of Geotechnics and Hydrogeology, Republic Secretariat for Economy I.V. SR B&H Sarajevo, Sarajevo, (In Bosnian/Croatian)
- [6] Poncelet, L. (1959), *Comparison of raingauges*. WMO Bull., 8 (4), pp. 186-190
- [7] Imamovic, M. (1997), *History of Bosniaks, Preporod Bosniak cultural community*, Sarajevo, p. 636, (In Bosnian)
- [8] Malcolm, N. (2011), *Bosnia, a short history*, Buybook, Biblioteka Memorija, Sarajevo, 2011., pp. 15-29, (In Bosnian/Croatian)
- [9] Grozdanic, S. (1974), *Introduction to Arabic-Islamic aesthetics, Contributions to Oriental Philology, XXIV/ 1974*, Oriental Institute, Sarajevo, p. 56, (In Bosnian)
- [10] Schutt, K. (1999), *Water, a source of beauty and health*, Knjiga i dom, Zagreb, pp. 9-17, (In Croatian)
- [11] Solomon, S. (2011), *Water: The Epic Struggle for Wealth, Power, and Civilization*, Harper Perennial; Reprint edition, pp. 126-157
- [12] Celebi, E. (1967), *Travelogue. Passages about Yugoslav countries. Translation, introduction and commentary written by Hazim Sabanovic. "Light"*, Sarajevo, pp. 122, 136-148, 213, 399-406, 463-469, 479, (In Bosnian)
- [13] Kresevljakovic, H. (1991), *Selected works, book III. "Veselin Maslesa"*, Sarajevo, pp. 99-224, (In Bosnian)
- [14] Celic, Dz., Mujezinovic, M. (1969), *Old bridges in Bosnia and Herzegovina, "Veselin Maslesa"*, Sarajevo, p. 178, (In Bosnian)
- [15] *Water Management Strategy of the Federation of Bosnia and Herzegovina 2010-2022 (PROPOSAL)*, Sarajevo, April 2010., (In Bosnian/Croatian)
http://www.fmpvs.gov.ba/texts/177_238_s.pdf, Accessed: 07.08.2011.
- [16] *European Union Program IPA 2007: „TECHNICAL BASIS“ for the development of sub-strategies for the implementation of the EU Directive on Drinking Water (98/83/EEC) and the EU Directive on Urban Wastewater (91/271/EC)*, Sarajevo, 2011., (In Bosnian)
- [17] *GLAAS 2010: UN-Water Global Annual Assessment of Drinking Water and Sanitation - Targeting Resources for Better Results*, UN-Water, WHO, Maj 2010.,
http://www.who.int/water_sanitation_health/publications/UN-Water_GLAAS_2010_Report.pdf
(Accessed: 10.28.2011.)
- [18] *The EU Water Framework Directive*
<http://ec.europa.eu/environment/pubs/pdf/factsheets/water-framework-directive.pdf>
Accessed: 7.10.2022.
- [19] *LAW ON NATIONAL PARK „UNA“*, (Official Gazette of the Federation of Bosnia and Herzegovina, number 44/08), (In Bosnian)
<http://www.fbihvlada.gov.ba/bosanski/zakoni/2008/zakoni/19hrv.htm>, (Accessed: 7.16.2022.)